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IMPLEMENTATION GUIDE

for use with

10 CFR PART 851, WORKER SAFETY AND HEALTH PROGRAM

> U.S. DEPARTMENT OF ENERGY WASHINGTON, D.C. 20585



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FOREWORD

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- 2. Beneficial comments (recommendations, additions, and deletions) and any pertinent data that may improve this document should be sent to the Director, DOE Office of Worker Protection Policy and Programs (EH-52), U.S. Department of Energy, Washington, D.C. 20585, by letter or by sending the self-addressed Standardization Document Improvement Proposal (DOE F 1300.3).
- This Guide is intended to identify generally acceptable methods for implementing the 3. provisions of 10 CFR Part 851.

ACRONYMS

ACGIH American Conference of Governmental Industrial Hygienists

AIHA American Industrial Hygiene Association ANSI American National Standards Institute

CFR Coder of Federal Regulations CSO Cognizant Secretarial Officer

D&D decontamination and decommissioning Environment, Safety, and Health ES&H

Energy Trace and Barrier Analysis ETBA Failure Modes and Effects Analysis **FMEA**

FTA Fault Tree Analysis

ISM integrated safety management

Job Safety Analysis **JSA**

National Nuclear Security Administration NNSA OSHA Occupational Safety and Health Administration

preliminary hazard analysis PHA PPE personal protective equipment

TLVthreshold limit value

TRADE Training Resources and Data Exchange

TWA time-weighted average

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IMPLEMENTATION GUIDE for use with 10 CFR PART 851, WORKER SAFETY AND HEALTH PROGRAM

1 INTRODUCTION

This non-mandatory guide (the Guide) provides supplemental information and describes implementation practices to assist contractors in effectively developing, managing, and implementing a worker safety and health program required by title 10 of the Code of Federal Regulations (CFR), Part 851 (10 CFR 851), Worker Safety and Health Program (the Rule). The Rule is promulgated pursuant to the Department of Energy's (DOE) authority under the Atomic Energy Act of 1954 and subsequent reorganization acts. This Guide supersedes DOE G 440.1-1, Worker Protection Management for DOE Federal and Contractor Employees, dated 07-10-97, for contractor employees. DOE G 440.1-1 remains in effect for DOE federal employees.

Specifically, this Guide discusses the regulatory requirements of the Rule, provides cross-references to DOE directives, other agencies' regulations and literature, and professional organizations' consensus standards that provide detailed guidance for implementing specific requirements in the Rule, and provides explanations, with examples, of how to meet the basic requirements for developing and implementing a worker safety and health program. Also included as Appendix A to this Guide is a model worker safety and health program compliant with the Rule using the DOE integrated safety management system structure.

The Rule establishes the framework for an effective worker safety and health program that provides DOE contractor workers with a safe and healthful workplace in which workplace hazards are abated, controlled or otherwise mitigated in a manner that provides reasonable assurance that workers are adequately protected from identified hazards.

The worker safety and health program integrates construction safety, fire protection, explosives safety, pressure safety, fire arms safety, industrial hygiene, biological safety, occupational medicine, motor vehicle safety, electrical safety and other functions addressed in 10 CFR 851.24 *Functional areas*.

This Guide also presents generally acceptable best practices that are used at DOE sites and at industries having efficient and effective worker safety and health programs. The guidance provided in this Guide allows for contractors to tailor their safety and health programs to effectively implement safety at every organizational level and to integrate safety other related site-specific worker protection activities and with the integrated safety mana gement system (851.11(a)(3)(ii), see Appendix A to this Guide)

This Guide provides DOE's views on acceptable methods of program implementation and is not mandatory. DOE believes that this Guide can serve as an effective tool in meeting the minimum regulatory requirements of the Rule. Conformance with this Guide will provide reasonable

assurance that the employer has complied with the related regulatory requirements. Alternate methods that are demonstrated to provide an equivalent or better level of protection are acceptable.

In this Guide, the word "must" designates requirements from the Rule. The words "should," "could," and "may" denote optional program recommendations and allowable alternatives, respectively.

DOE's Office of Environment, Safety and Health develops and disseminates technical clarifications of the Rule and other worker protection standards. See § 3.1.6 of this Guide. Requests for interpretation of the Rule that exceed the bounds of clarification should be forwarded to DOE's Office of General Counsel.

This Guide does not establish any requirements legally enforceable pursuant to 10 CFR Part 851. However, it should be noted that the provisions of a contractor's approved program are enforceable under the Rule. Accordingly, provisions of the Guide that are incorporated into a contractor's approved program would be enforceable on the contractor's worksites covered under the approved program.

2 GENERAL INFORMATION

It is DOE policy to provide a safe and healthful workplace for all contractor personnel. These conditions will be ensured by implementing the worker safety and health program established in the Rule.

This Guide is organized consistent with the requirements in the Rule. These requirements reflect what the Department considers to be the essential elements of a successful worker safety and health program:

Management responsibilities and worker rights (851.20);

Hazard identification and assessment (851.21):

Hazard prevention and abatement (851.22);

Safety and health standards (851.23);

Functional areas (851.24);

Training and information (851.25); and

Recordkeeping and reporting (851.26).

The Department recognizes that the Rule provides the basic foundation for a worker safety and health program and that some DOE elements or contractors may need or decide to go beyond the Rule's minimum requirements in establishing programs to protect workers from hazards associated with their activities. Decisions concerning implementation of worker protection measures should be based on the use of a graded approach to ensure that available resources are used most efficiently. The Department also recognizes that the worker safety and health program must be integrated into other related site-specific worker protection activities and with the integrated safety management system (851.11(a)(3)(ii), see Appendix A to this Guide).

- 3 **GUIDANCE**
- 3.1 **General Provisions (Subpart A)**
- 3.1.1 Scope and purpose. (851.1)

3.1.1.4 Scope

The Rule applies to the conduct of contractor activities at DOE sites (851.1(a)). A contractor means any entity under contract with DOE, or a subcontractor to such an entity, and includes any affiliated entity such as a parent organization (851.3). These activities should include design, construction, operation, maintenance, decontamination and decommissioning, research and development, and environmental restoration activities performed by DOE contractors (and their subcontractors) at covered workplaces except for exclusions described in 851.2 Exclusions. A covered workplace means a place at a DOE site where work is conducted by a contractor to further a DOE mission (851.3).

The Rule directs DOE contractors to perform work in a manner that protects the safety and health of workers, without regard to whether the workers are employed by a contractor covered by agreements of indemnification under the Price-Anderson Act, 42 U.S.C. 2210(d) or are engaged in a nuclear or non-nuclear activity. DOE's authority to impose civil penalties, however, applies only to contractors, and their subcontractors and suppliers, covered by agreements of indemnification under the Price-Anderson Act, which, in turn, requires DOE to include an agreement of indemnification in every contract that has the potential to involve any activity with any risk of a nuclear incident. Hence, DOE can impose civil penalties for violations of requirements of this Rule, but only against contractors covered by an agreement of indemnification and their subcontractors and suppliers. DOE will continue to use contractual enforcement mechanisms to ensure compliance with this Rule by contractors and their subcontractors and suppliers that are not covered by an agreement of indemnification.

The Rule integrates the Chronic Beryllium Disease Prevention Program (CBDPP), established under 10 CFR 850, as an integral part of the worker safety and health program. In addition, to ensure consistency, the Rule also modifies 10 CFR 850 to clarify that the CBDPP supplements the worker safety and health program under Part 851 and the CBDPP is enforceable under 10 CFR 851. DOE may take steps pursuant to Part 851 to enforce compliance by contractors with any DOE approved CBDPP.

The Rule applies to sites that are the responsibility of DOE/NNSA.

3.1.1.5 **Purpose**

The purpose of the Rule is to establish safety and health requirements that a contractor responsible for a covered workplace must implement through a worker safety and health program that provides its workers with a safe and healthful workplace in which workplace hazards are abated, controlled or otherwise mitigated in a manner that provides reasonable assurance that workers are adequately protected from identified hazards. The Rule also provides

procedures for investigating whether a violation of a requirement has occurred, for determining the nature and extent of any such violation, and for imposing an appropriate remedy (851.1(b)).

The Rule complements DOE's nuclear safety requirements. Personnel responsible for implementing worker protection and nuclear safety requirements should coordinate and cooperate in instances where the requirements overlap. The two sets of requirements should be integrated and applied in a manner that guards against unintended results and provides reasonable assurance of adequate worker protection.

3.1.2 **Exclusions.** (851.2)

The Rule applies to the conduct of contractor activities at DOE sites except for sites:

Regulated by the Occupational Safety and Health Administration (OSHA) on [date final Rule is issued], or

Operated under the authority of the Director, Naval Nuclear Propulsions, pursuant to Executive Order 12344, as set forth in Public Law 98525, 42 U.S.C. 7158 note.

The Rule does not apply to:

Radiological hazards or nuclear explosives operations to the extent regulated by 10 CFR Parts 20, 820, 830 or 835; or

DOE activities performed away from a DOE site, such as transportation activities to and from a DOE site.

The Rule excludes radiological hazards to the extent they are already regulated by the DOE nuclear safety requirements in 10 CFR parts \$20,830, and 835. These existing rules already deal with radiological hazards in a comprehensive manner through methods such as the Quality Assurance Program Plan, the Safety Basis, the Documented Safety Analysis, and the Radiation Protection Program Plan.

3.1.3 **Definitions.** (851.3)

Section 851.3 of the Rule establishes definitions and terms used throughout the Rule. Further discussion of several key terms is provided below.

Closure facility hazard refers only to those facility-related conditions within a closure facility involving deviations from the technical requirements of 851.23 of the Rule that would require costly and extensive structural and engineering modifications to be in compliance. Closure facilities may have other hazards as well.

A contractor is any entity, including affiliated entities, such as a parent corporation, under contract with DOE, including a subcontractor at any tier, with responsibility for performing work at a DOE site in furtherance of a DOE mission. As stated in the Rule, all contractors and subcontractors at any tier are covered under this definition. The definition does not, however, apply to contractors or subcontractors that provide only "commercial items" as defined under the

Federal Acquisition Regulations (FAR). Such contractors would not be performing work in furtherance of a DOE mission.

DOE site means a DOE-owned or -leased area or location or other area or location controlled by DOE where activities and operations are performed at one or more facilities or places by a contractor in furtherance of a DOE mission. This definition includes all sites where DOE exercises regulatory control under the Atomic Energy Act (AEA), even if DOE does not own or lease the site.

Section 851.3(b) clarifies that terms that are undefined in the Rule but are defined in the Atomic Energy Act of 1954 have the same meaning as under the Atomic Energy Act of 1954.

3.1.4 Compliance Order. (851.4)

Section 851.4 of the Rule describes the purposes of issuing compliance orders. These purposes include identifying situations that violate, potentially violate, or are inconsistent with the Rule and mandating a remedy, work stoppage or other action. The section also clarifies that compliance orders constitute final orders, that modifications or rescissions must be requested within 15 days, and that these requests for modifications do not automatically stay the effect of the order unless formally stayed. The section further establishes the requirement for posting of the compliance order.

It should be noted that the authority established in the regulation to use compliance orders to stop work is independent from contract provisions. Compliance orders by the Secretary represent an exercise of AEA authority. DOE intends, however, that all mandated work stoppages (whether issued through a compliance order or as a result of the lack of an approved program) would be implemented in close coordination with the DOE Field Office and the contracting officer with proper consideration given to mission and safety critical operations and the continued safety of other workplace activities.

3.1.5 Enforcement. (851.5)

Section 851.5 of the Rule establishes enforcement provisions for the Rule, which allow DOE to employ either civil penalties or contractual mechanisms such as reduction in fees when a contractor fails to comply with Rule provisions.

See	for additional	guidance on	enforcement	of the Rule.
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3.1.6 Petitions for generally applicable rulemaking. (851.6)

Section 851.6 of the Rule sets forth procedures for petitions to initiate generally applicable rulemaking to amend the provisions of the Rule. These procedures are very detailed and describe the right to file petitions, how to file petitions, and the required content of and determination on petitions.

3.1.7 Requests for a binding interpretative ruling. (851.7)

Section 851.7 of the Rule provides for requests for interpretive rulings applying the regulations to a particular set of facts and providing an interpretation that is binding on DOE but only with respect to the party requesting the ruling. The Office of General Counsel is responsible for formulating and issuing any interpretation of the requirements of the Rule. Detailed procedures for requesting binding interpretive rulings are described as well.

3.1.8 **Informal requests for information.** (851.8)

DOE's Office of Worker Protection Policy and Programs, EH-52, develops and disseminates technical clarifications of the Rule and other worker protection standards.

Contractors may request informal clarifications of Rule provisions instead of applying for binding interpretive rulings. Informal clarifications offer the benefit of a less formal process to obtain a quicker response. They are appropriate for issues involving clarification of how a technical requirement of the Rule applies in a specific case where the intent of the technical requirement is clear and well established. However a binding interpretive ruling by the General Counsel (issued under 851.7) would be more appropriate in situations where it is not clear how the requirement of the Rule applies to a unique situation or workplace condition not specifically envisioned in the drafting of the Rule.

As clarified in the Rule, informal information provided to a contractor under 851.8 would be non-binding on DOE in that DOE may take enforcement action against the contractor if the contractor's actions do not meet Rule requirements.

The Standards Interpretations Response Line has been established to provide information on technical safety and health requirements, requirements published by OSHA, and other adopted standards. DOE Federal personnel who would like clarification of the Rule beyond what is found in this Guide may submit a request to the Safety and Health Standards Response Line at http://www.eh.doe.gov/rl/. The web site allows users to submit new requests as well as search for and access previous technical clarifications.

The responses given by EH-5 are advisory only and are not binding on DOE. In cases where the information is related to OSHA standards, EH-5 consults the existing body of OSHA interpretations on these standards. EH-5 also consults with OSHA representatives if OSHA interpretations do not address a unique DOE question or circumstance.

3.2 **Program Requirements (Subpart B)**

3.2.1 **General Requirements.** (851.10)

The Rule requires contractors to provide a place of employment that is free from recognized hazards that are causing or have the potential to cause death or serious physical harm to workers (851.10(a)). This provision of the Rule was carried over from DOE Order 440.1A and closely parallels the OSHA General Duty Clause established in Section 5(a)(1) of the OSH Act of 1970

(29 U.S.C. 654) which establishes OSHA's General Duty Clause. Accordingly, in implementing this provision, contractors should consider criteria similar to those established by OSHA for the implementation of the General Duty Clause. Specifically, in determining whether a workplace condition presents a recognized hazard that is causing or has the potential to cause death or serious physical harm to workers, contractors should consider whether:

The condition presents a hazard to which workers are exposed (e.g., the hazard exists and workers are exposed to the hazard);

The hazard is a recognized hazard (e.g., the hazard is identified and addressed in a recognized industry consensus standard, or other credible industry guidance or documentation):

The hazard is causing or is likely to cause death or serious physical harm; and Feasible and useful methods exist to correct the hazard.

See	fo	or additi	onal gu	iidance	on the	implementation	and enforcem	nent of
851.10(a)(1).		/ /	/ "	/ /		1		

The Rule further requires contractors to comply with the applicable requirements of the Rule and the worker safety and health program for the contractor's workplace. All work performed by contractors or subcontractors in a covered workplace must comply with Subpart C Specific Program Requirements of the Rule. Contractors must establish a written program that describes how the contractor will comply with the requirements in Subpart C of the rule that are applicable to the hazards associated with the contractor's scope of work as well as the provisions of any compliance order (851.4) issued by the Secretary.

Development and approval of the worker safety and health program. (851.11) 3.2.2

The Rule establishes the procedures for contractor coordination, submission, DOE approval, updates, and labor organization notification of the written worker safety and health program. The written program must provide the methods for implementing the requirements of Subpart C of the Rule (851.11)(a). See section 3.3 of this Implementation Guide for more detailed guidance on the requirements of Subpart C of the Rule. It should describe integrated management organization and support systems that fully satisfy the requirements of the Rule. It should clearly convey the framework for the program and describe how the program works. All elements of the safety and health program should be part of the written program.

The written program should address and integrate into the worker safety and health program, but not be limited to: the worker safety and health functional areas in Appendix A to the Rule (construction safety, fire protection, explosives safety, pressure safety, fire arms safety, industrial hygiene, biological safety, occupational medicine, motor vehicle safety, electrical safety, nanotechnology safety, workplace violence). See section 3.6 of this Implementation Guide for more detailed guidance on these functional area program requirements. The written program also should address and integrate other worker safety and health functional areas that are not included in Appendix A to the Rule but nonetheless are needed to address workplace hazards. The contractor should identify the taxonomy of other documentation that is relevant for its worker safety and health program (including policy, objectives, operating procedures, interfaces with

other functions (e.g., finance, maintenance, security), and other safety and health related plans mandated by specific requirements (e.g., Health and Safety Plans in accordance with 29 CFR 1910.120)). Coordination should be established, maintained, and documented among these technical disciplines and other organizations (e.g., radiation control) at a site to ensure successful implementation of the worker safety and health program.

The worker safety and health program must integrate the Rule's requirements with other site worker protection activities and the integrated safety management system (ISMS) (851.11(a)(3)(ii)). Appendix A to this Guide is model worker safety and health program compliant with the Rule using the DOE integrated safety management system structure. Additional information concerning DOE expectations for integrating safety management can be found in Department of Energy Acquisition Regulations (DEAR) clause 48 CFR 970.5223-1, Integration of Environment, Safety and Health into Work Planning and Execution which states at (c) the contractor shall manage and perform work in accordance with a documented Safety Management System (8ystem).

It is important that contractors include provisions in their subcontract documents to ensure that subcontractors comply with these standards and functional areas as well as other requirements that may be needed to protect workers from unusual hazards at their site. Title 48 CFR 970.5223-1 at (h) states regardless of the performer of the work, the contractor is responsible for compliance with the E&&H requirements applicable to this contract. The contractor is responsible for flowing down the ES&H requirements applicable to this contract to subcontracts at any tier to the extent necessary to ensure the contractor's compliance with the requirements. Contractors must determine which program requirements should flow down into contracts with their subcontractors and incorporate appropriate requirements. All requirements in the Rule must be met, regardless of whether the contractor or the subcontractor performs the actual worker protection activity. For example, a contractor may provide exposure monitoring for the subcontractor, or the contractor may require the subcontractor to conduct its own exposure monitoring. In either case, DOE looks to the prime contractor for ensuring compliance at the site.

DOE contractors should note that all subcontractors and suppliers of an indemnified contractor are considered indemnified contractors, and as such are subject to either civil penalties or contract penalties under the Rule. DOE will consider the specific circumstances in a given case to determine appropriate enforcement actions in cases involving contractors and their subcontractors. See for additional guidance on enforcement on multiemployer worksites and worksites involving contractors and their subcontractors.

The Rule requires that contractors coordinate with the other contractors responsible for work at the covered workplaces to ensure that there are clear roles, responsibilities and procedures that will ensure the safety and health of workers at multi-contractor workplaces ((851.11(a)(2)(ii)).

When multiple contractors, subcontractors, and Federal organizations are working on the same DOE site, resolving safety and health issues between the organizations can be confusing. For this reason, clear statements of roles and responsibilities with respect to compliance with worker safety and health program requirements, and mechanisms for resolution of these issues should be clearly defined. Good lines of communication between the affected parties are essential and

should be included in agreements between the parties. The nature and extent of the organizational relationships vary from situation to situation. The need for a firmly established agreement between affected parties regarding worker safety and health program requirements is essential. Heads of Departmental Elements and Heads of Field Elements should evaluate the need for and, where necessary, direct the development of formal written agreements between organizations on their sites. Such agreements are to outline the respective roles, responsibilities, and authorities of each contractor or organization as they relate to compliance with all components of the worker safety and health program and the resolution of cross-cutting worker protection related issues.

Some common written instruments used at DOE facilities to document and communicate agreements between multiple organizations are the Contract, the lease agreement (for tenant organizations), the Memorandum of Understanding (MOU), the Memorandum of Agreement (MOA), and the Intraservice Support Agreement (ISA). These and other documents are usually prepared to identify roles and responsibilities of respective parties in these shared situations. The roles, responsibilities, and procedures contained in these agreements should be clearly addressed in the written worker safety and health program to ensure that they are adequately communicated throughout the site.

3.2.2.1 DOE Evaluation and Approval. (851.11(b))

Section 851.11(b) discusses DOE evaluation and approval procedures including identifying the reviewing and approval authority, the timeline for the approval process and activities and procedures following approval or lack of approval of the program.

Program Updates. (851.11(c)) 3.2.2.2

Contractors must submit an update to their program to the Head of the DOE Field Element for approval whenever a significant change or addition to the program is made (851.11(e)). In determining whether a change is significant and an update is warranted contractors should consider whether the change is needed to ensure the program accurately reflects actual workplace activities and related hazards and controls or approved program roles and responsibilities. Such changes would be considered "significant" and would require program update and submittal. The worker safety and health program updates can be embedded in the integrated safety management system program updates as long as the Rule's update requirements are met.

3.2.2.3 **Labor Organizations.** (851.11(d))

For contractors whose workers are represented for collective bargaining by a labor organization, section 851.11(d) of the Rule establishes requirements regarding the involvement of labor organizations in the development and implementation of the worker safety and health program.

3.2.3 Implementation. (851.12)

This section directs contractors to implement the Rule (851.12).

3.2.4 **Compliance.** (851.13)

Contractors must achieve compliance with the Rule no later than May 25, 2007 or may contractually be required to comply before the Rule's effective date (851.13). Contractors may use already established worker safety and health programs (e.g., Integrated Safety Management System program description, Work Smart Standards process) that are approved by the Head of the DOE Field Element as meeting the requirements of the Rule. (Appendix A to this Guide is a model worker safety and health program compliant with the Rule using the DOE integrated safety management system structure.)

- 3.3 **Specific Requirements (Subpart C)**
- Management responsibilities and worker rights and responsibilities. (851.20) 3.3.1
- Management responsibilities. (851.20(a)) 3.3.1.1

Contractor managers must be responsible for the safety and health of its workforce.

3.3.1.1.1 Policy, goals, and objectives. (851.20(a)(1))

The Rule requires contractors to establish written policy, goals, and objectives for the worker safety and health program (851.20(a)(1)).

A facility's worker protection policy is the guiding principle or philosophy that provides overall direction for the organization in regard to worker protection. The written policy statement conveys senior management's commitment and expectations for overall performance. The organization states its commitment to worker protection through a written, clearly communicated policy, which is ultimately its "mission" statement relative to worker protection. The policy places appropriate emphasis on worker protection and is signed by the highest ranking company official on the site. A concise and clear worker protection policy:

Creates consistency and continuity in safety and health activities;

Provides a point of reference when worker protection conflicts with other company goals;

Supports supervisors in their enforcement of worker protection rules and safe and healthful work practices.

An example of a worker protection policy might be as follows:

"This organization is committed to providing a safe and healthful workplace for employees. These conditions shall be ensured through an aggressive and comprehensive worker safety and health program. This organization regards employee protection as a priority and is committed to developing, implementing, and improving safety and health practices that will afford optimal protection to employees and enable the organization to continually improve the quality of its worker protection performance. The safety and health of employees shall take precedence whenever conflicts with production or other objectives arise."

An organization's worker protection policy should flow down into specific goals and objectives, which in turn are reflected in the written program. The goals and objectives should be measurable for use as indicators of performance.

3.3.1.1.2 Qualified staff. (851.20(a)(2))

The Rule requires DOE elements and contractors to use qualified worker protection staff to direct and manage the worker safety and health program (851.20(a)(2)).

Project organizations should seek to hire and retain the most qualified worker protection professionals needed for the hazards at the site. Examples of these positions are Occupational Safety and Health Managers, Safety Engineers, Construction Managers, Industrial Hygienists, etc. These individuals may be employed directly, by contract, or as consultants, but they should possess qualifications relative to the particular hazards at the facility. The hiring of certified professionals (e.g., Certified Safety Professionals and Certified Industrial Hygienists) may be appropriate and help to ensure that competent staff is in place. Guidance on specific qualifications for these professionals is available in DOE's Functional Area Qualification Standards available at http://cted.inel.gov/cted/qualstd.html.

3.3.1.1.3 Accountability (851.20(a)(3))

The Rule requires DOE elements and contractors to assign worker protection responsibilities, evaluate personnel performance, and hold personnel accountable for worker protection performance (851.20(a)(3)).

Managers of sites should clearly communicate roles, responsibilities, and authorities and insist on accountability of workers at all levels. Managers and supervisors should carry out their own responsibilities and expect employees to follow safe and healthful work practices. Managers and supervisors held accountable for their worker protection responsibilities are more likely to press for solutions to safety and health problems. Managers are typically accountable for the overall worker safety and health program, including planning and allocating resources for the facility. Supervisors are accountable for ensuring that the worker protection plans, programs, and procedures, including hazard identification and abatement activities, are implemented on a day-to-day basis on the front line. Employee accountability involves following procedures, using safe work practices, reporting hazards, etc.

Holding managers, supervisors, and employees accountable relative to the expectations of their respective positions greatly increases the probability of maintaining safe working conditions. The results of holding people accountable should be frequently communicated and thoroughly documented. The best way is to include roles, responsibilities, and authorities for worker protection in managers', supervisors', and employees' performance objectives. This can be done by establishing performance goals and objectives for personnel and evaluating the person against those elements periodically. The organization should have a process for measuring each individual's performance, including worker protection performance. These evaluations should be considered in the individual's ratings, promotions, bonuses, evaluations, etc.

The safety and health program should include a system for ensuring that employees comply with safe and healthy work practices, which includes provisions for recognition of employees for following safe and healthful work practices, training and retraining programs, disciplinary actions, or any other means to ensure employee compliance with safe and healthful work practices.

Top management sets the tone for the work done on site. They should make it known to all employees that worker protection is of vital importance. Moreover, top management commitment to worker protection should be evident in every aspect of site operations. Management can demonstrate their commitment by taking an active role and setting a positive example. They should establish the written worker safety and health program, ensure that it integrates implementation of all provisions of the Rule, and fully support the program. They can also demonstrate commitment through such activities as:

Walking their spaces with workers, supervisors, and worker protection professionals;
Becoming actively involved in worker protection committees; and
Encouraging excellence through recognition programs such as DOE's Voluntary Protection
Program for contractors.

The commitment to ensure that all employees understand that the organization regards worker protection as a primary objective is fundamental. Management commitment to worker protection should be evident to the employee and reinforced by genuine efforts to maintain excellence in worker protection.

3.3.1.1.4 Employee involvement (851,20(a)(4))

The Rule requires the contractor to provide mechanisms to involve workers and their elected representatives in the development of the worker safety and health program goals, objectives, and performance measures and in the identification and control of hazards in the workplace (851.20(a)(4)). Employee involvement is an element of many DOE Sites' integrated safety management system and is included in the model worker safety and health program provided in Appendix A to this Guide.

Employees play a vital role in implementing an aggressive and effective worker safety and health program. Employees are involved in all site operations, have intimate knowledge of potential worker protection hazards, and can contribute as valuable problem solvers. Active and meaningful employee involvement in the worker safety and health program means the workforce is trained to recognize hazards and is involved in correcting them. An indicator of effective employee involvement is enthusiastic employees who understand their role in the program and who are interested in its success.

Contractor line organizations should assign and communicate worker protection responsibilities to workers, provide adequate authority and resources to permit them to meet these responsibilities, and hold them accountable for proper performance. Line management should also develop and implement programs to encourage and promote employee involvement and commitment to the worker safety and health program. Contractors should also establish forums

for employees to gain an appreciation for the worker safety and health program and to foster communication between management and affected workers.

Examples of acceptable and effective mechanisms for employee involvement in safety and health program development and implementation include, but are not limited to, the following:

Participation on committees and work teams;

Participation in worksite inspections, hazard analysis (especially job safety analyses (JSAs), see §3.3.2.1.6), and design control;

Development and review of workplace operating procedures;

Assistance in training;

Conduct of worker protection meetings; and

Participation in accident investigations.

Committees. An important component of employee involvement for a worker safety and health program is the establishment of one or more worker protection committees which bring people together in a cooperative effort to promote safety and health at the worksite. Such committees can be used to promote employee involvement in the development of program goals, objectives, and performance measures and in the identification and correction of workplace hazards. Many types of committees exist that address worker protection issues, and no one committee organization fits all occasions and activities. Worker protection functions may be included in the charters of different committees. The charter, decisions, and actions of a worker protection committee should be developed by the committee through negotiations and voting and approved by management. Each worker protection committee should consist of employees and management representatives, with the majority being non-managerial. Note that the organization of any such committee must be consistent with acceptable practices for labor-management relations. The responsibilities of each worker protection committee should be clearly stated in a written charter, and each committee should have clear and specific performance-based goals. These goals should be consistent with the goals and objectives of the worker safety and health program and responsive to the atmosphere and operations in the worksite. The goals should also be revised as necessary to accommodate changes in operations, technology, and materials and to reflect tasks completed by the committee.

Worker protection committees should have access to necessary records (subject to provisions of the Privacy Act), work areas, and personnel to fully investigate any worker protection concern. Committees should also have access to the training, resources, and technical expertise that will allow them to function effectively.

Participation in Worksite Inspections, Hazard Analyses, and Design Control. Employees should be encouraged to perform informal worksite inspections as part of their daily work activities. This includes daily worksite walk-throughs by workers and their supervisors.

For worksite inspections to be effective, employees should:

Be trained in hazard recognition;

Have reasonable access to worker protection professionals;

Have access to reference sources (e.g., all applicable worker protection requirements documents, guides, and technical standards);

Be able to suggest abatement methods; and

Be able to track corrective actions.

Instructors. Qualified employees make excellent instructors for new employees. Having employees as instructors also enhances worker protection awareness because instructors must keep up with requirements to be effective. Employee presentations at meetings are an excellent way for employees to share their experiences and lessons learned.

Accident and incident investigations. Including employees in accident/incident investigations is a worthwhile investment for employers. Worksite employees often can provide valuable insight on actual workplace procedures that could have contributed to an accident and on the effectiveness and practicality of proposed corrective actions. In addition, involvement in accident investigations can increase an employee's awareness of how workplace hazards can lead to accidents and incidents and, thus, how employees can better protect themselves. One way to involve employees in accident investigations is to establish special function committees with a specific scope of responsibility and to periodically rotate employee membership on the committee. Selected employees should be trained in accident/incident investigations, be used in the investigations, and be recognized for their contributions.

Other avenues for employee involvement. Employee participation activities should ensure employee involvement in the development, review, and revision of worker protection related documents and activities, including:

Performance measures for the worker safety and health program;

Annual goals and objectives;

Job safety analyses;

Operating procedures;

Site inspections and exposure assessments;

Analyses of facilities, processes, materials, and equipment;

Variance requests and hazard abatement plans, along with the development of equivalent, interim, or protective measures for variance requests or abatement plans; and

Participation in the development of worker protection requirements, guides, and standards (consistent with labor/management agreements).

3.3.1.1.5 Access to information. (851.20(a)(5))

The Rule requires contractors to provide workers with access to information relevant to the worker safety and health program. (851.20(a)(5)). This information is essential for the success of mechanisms to encourage employee involvement required by 851.20(a)(4) and the exercise of workers' rights required by 851.20(b)(2).

3.3.1.1.6 Report events and hazards. (851.20(a)(6))

The Rule requires contractors to establish procedures for workers to report without reprisal jobrelated fatalities, injuries, illnesses, incidents, and hazards and make recommendations about appropriate ways to control those hazards (851.20(a)(6)).

3.3.1.1.7 Prompt response to reports. (851.20(a)(7))

The Rule requires contractors to provide for prompt response to the reports and recommendations made by workers under 851.20(a)(7).

3.3.1.1.8 Regular communications. (851.20(a)(8))

The Rule requires contractors to provide for regular communication with workers about workplace safety and health matters (851/20(a)(8)). The contractor should include a system for communicating with employees about matters relating to worker protection, including provisions designed to encourage employees to inform the employer of hazards at the worksite without reprisal. Many of the suggestions in §3.3.1.1.4 are excellent vehicles for regular communications between workers and management on workplace safety and health matters.

3.3.1.1.9 Stop work authority. (851.20(a)(9))

The Rule requires contractors to establish procedures to permit workers to stop work or decline to perform an assigned task because of a reasonable belief that the task poses an imminent risk of death, serious physical harm, or other serious hazard to the workers, in circumstances where the worker believes there is insufficient time to utilize normal hazard reporting and abatement procedures (851.20(a)(9)).

3.3.1.1.10 Inform workers of rights. (851.20(a)(10))

The Rule requires contractors to inform workers of their rights and responsibilities by appropriate means, including posting the DOE-designed Worker Protection Poster in the workplace where it is accessible to all workers (851.20%)(10)). Training (§3.3.6) is another vehicle for informing workers of their rights and responsibilities.

DOE contractors are expected to post the DOE Worker Protection Poster in a significant number of places to permit workers the opportunity to observe the information en route to or from their work place. In addition to the poster, contractors should take other actions to provide relevant information to workers.

Other worker protection posting requirements may be applicable to special situations in specific workplaces. For example, OSHA's confined space standard requires employers to post danger signs or use other equally effective means to inform exposed employees of the existence and location of, and the danger posed by, the confined space. DOE elements and contractors should consult the appropriate OSHA regulations for specific posting requirements.

3.3.1.1.11 Budget

To meet the challenge of managing an adequate worker safety and health program with sometimes constrained resources, it is imperative that contractors request the necessary funding for operation of the facility and properly plan for effective use of the personnel, material, and resources to support the worker safety and health program. Planning and budgeting exercises serve to set priorities for operations to include worker protection and become the foundation for structuring an operational plan that provides for adequate worker protection. Funding requirements are determined based on projected costs and are submitted in the annual operating budget plan. Operational planning typically spans periods of 1 to 5 years and focuses on specific functions such as marketing, research and development, production, finances, worker protection, etc. These are the things necessary to ensure that the day-to-day operation has adequate materials and supplies to carry out its work. Likewise, the facility requirements—including the people, equipment, supplies, and resources necessary for worker protection—should be addressed in this planning. The budget process is key component of tailoring an ISMS to the hazards of a Site's facilities and activities and is included in the model worker safety and health program provided in Appendix A to this Guide.

3.3.1.1.12 Additional resources.

Occupational Safety and Health Administration, Managing Worker Safety and Health Occupational Safety and Health Administration, Safety and Health Program Management Guidelines

10 CFR 830.330, Training and Qualification National Safety Council Data Sheet 585, Rev. 94, "Management Safety Policies and Procedures.

3.3.1.2 Worker rights and responsibilities. (851.20(b))

The Rule requires workers to comply with the safety and health standards and directives in the Rule that are applicable to their own actions and conduct (851.20(b)).

Workers should also actively participate in the contractor's safety and health program by taking advantage of the worker rights established under the Rule in 851.20(b), in a responsible manner. These rights are described below:

3.3.1.2.1 Participate on official time. (851.20(b)(1))

Workers have the right to participate in activities described in the Rule on official time.

3.3.1.2.2 Access to information. (851.20(b)(2))

The Rule provides workers with the right to have access to:

DOE safety and health publications (851.20(b)(2)(i));

The worker safety and health program for the covered workplace (851.20(b)(2)(ii));

The standards, controls, and procedures applicable to the covered workplace (851.20(b)(2)(iii)). This includes a workers right to request information about safety and

health hazards in the workplace, precautions that may be taken, and procedures to be followed if the worker is involved in an accident or is exposed to toxic substances;

The safety and health poster that informs the worker of relevant rights and responsibilities (851.20(b)(2)(iv)). As noted in section 3.3.1.1.10 of this Guide, workers have rights to access additional posted information in special situations in specific workplaces. For example, OSHA's confined space standard requires employers to post danger signs or use other equally effective means to inform exposed employees of the existence and location of, and the danger posed by, the confined space;

Limited information on any recordkeeping log (OSHA Form 300). Access is subject to Freedom of Information Act requirements and restrictions (851.20(b)(2)(v)); and The DOE Form 5484.3 (the DOE equivalent to OSHA Form 301) that contains the employee's name as the injured or ill worker (851.20(b)(2)(vi)).

3.3.1.2.3 Notification of monitoring results. (851.20(b)(3))

A worker must be notified when monitoring results indicate the worker was overexposed to hazardous materials (851.20(b)(3)). Many of the OSHA expanded health standards in 29 CFR 1910, Subpart Z – Toxic and Hazardous Substances (mandated under 851.23(a)), also specifically require that this notification include all workers for whom the results are representative (e.g., 1910.1018, 1940.1025, 1910.1044, 1910.1045). Where not specifically required, however, contractors should still ensure that all workers covered under representative monitoring are notified when monitoring results indicate that they were overexposed to hazardous materials. Furthermore, contractors should also notify workers of results of monitoring for hazardous materials even if no overexposure was detected. In this way, workers are informed and fully aware of ongoing workplace conditions.

Unless otherwise specified in a standard under 851.23(a), notification of monitoring results should include the following:

Notification to the affected workers of the results, in writing within 10 working days after receipt of the results:

Notification should be made personally to the affected worker or posted in location(s) that is readily accessible to the affected worker, but in a manner that does not identify the individual to other workers; and

A description and explanation of the results with and without any respiratory protection that the worker used during the monitoring.

If the monitoring results indicate that a worker's exposure was at or above an occupational exposure limit (or action level for those hazardous materials with action levels), the contractor should:

Include in the notice a statement that the occupational exposure limit or action level has been met or exceeded:

Include in the notice a description of the corrective action being taken by the contractor to reduce the worker's exposure;

Notify DOE and the site occupational medical director of these results; and

Report exposures that exceed an occupational exposure limit in a manner consistent with DOE Order O 231.1A Chg 1, June 6, 2004 Environment, Safety and Health Reporting using procedures in DOE Manual M 231.1-1A Chg 1, September 9, 2004 Environment, Safety and Health Reporting Manual.

3.3.1.2.4 Observe monitoring. (851.20(b)(4))

Workers have the right to observe monitoring or measuring of hazardous agents and have the results of their own exposure monitoring.

3.3.1.2.5 Accompany inspections. (851.20(b)(5))

The Rule provides that a representative authorized by employees may accompany the Director (DOE official to whom the Secretary has assigned the authority to investigate the nature and extent of compliance with the Rule) or his authorized personnel during the physical inspection of the workplace for the purpose of aiding the inspection. When no authorized employee representative is available, the Director or his authorized representative must consult, as appropriate, with employees on matters of worker safety and health (851.20(b)(5)).

One or more employee representatives should be provided the opportunity to participate in briefings and in the walk-around phase of DOE-conducted oversight inspections. Note that employee participation also may have to be consistent with binding labor-management agreements that are outside the scope of the Rule. As noted in paragraph 3.3.1.2 of this Guide, DOE expects that workers will exercise these rights in a responsible manner.

3.3.1.2.6 Results of inspections and investigations. (851.20(b)(6))

Workers have the right to request and receive results of inspections and accident investigations (851.20(b)(6)). In areas where noncompliance with a DOE-prescribed worker protection requirement is identified during an oversight inspection, information about the poncompliance must be conveyed to worksite employees. This can be achieved in a number of ways but at a minimum, must include posting of the notice of violation in such areas until the noncompliance is corrected (851.42(e)).

3.3.1.2.7 Express concerns. (851.20(b)(7))

Workers have the right to express concerns related to worker safety and health (851.20(b)(7)).

3.3.1.2.8 Decline to perform in imminent risk. (851.20(b)(8))

Workers have the right to refuse to work when faced with an imminent danger of death or serious physical harm coupled with a reasonable belief that there is insufficient time to use normal procedures to abate the hazard (851.20(b)(8)).

3.3.1.2.9 Stop work. (851.20(b)(9))

Workers may stop work when they discover exposures to imminently dangerous conditions or other serious hazards provided that the stop work is exercised in a responsible manner consistent with procedures in the safety and health program (851.20(b)(9)).

The procedures should ensure that any stop work authority is exercised in a justifiable and responsible manner. All workers, supervisors, managers, and OSH professionals are responsible for being cognizant of the conditions in their workplaces and for being prepared to stop work when these conditions pose a serious threat to health or safety. When a "reasonable person" views the circumstances as having the potential to cause injury, serious impairment, or harmful health effects, a stop work order should be issued.

Whenever workers see a need for a stop work order, they should request one from their supervisors. Before a stop work order is issued, the person issuing it should ensure that the work stoppage itself will not negatively impact the health and safety of workers. Contractors should have procedures in place that address stop work authority, and workers should be trained to those procedures.

3.3.1.2.10 Employee concerns

In addition to relying on enforcement of the Rule, workers that believe they are being denied the rights provided by 851.20(b) or are being subjected to reprisals for attempting to exercise those rights, may file an employee concern using DOE O 442.1A *Department of Energy Employee Concerns Program*. That program requires that employees be encouraged to first seek to resolve concerns with their first-line supervisors or use established concern or complaint resolution systems. If these systems are unknown or unavailable, or have not dealt, or cannot deal effectively with a concern, employee concerns program personnel (first local, then headquarters) can assist concerned employees in determining which processes could be used to evaluate and resolve their concerns. More information is available in G 442.1-1 *Department of Energy Employee Concerns Program Guide* and at http://your.energy.gov/genempcon.html.

3.3.1.2.11 Additional resources

OSHA standards that address informing workers of hazards include, among others, Hazard Communication (29 CFR 1910.1200), Hazardous Waste Operations and Emergency Response (29 CFR 1910.120), Confined Space (29 CFR 1910.146), Blood-borne Pathogens (29 CFR 1910.1030), and the specific chemical substance regulations in 29 CFR 1910, Subpart Z.

For additional guidance on employee rights and responsibilities, see U.S. Department of Labor, Fact Sheet No. OSHA 95-35, *OSHA: Employee Workplace Rights and Responsibilities*, dated 01-01-95.

10 CFR Part 708 (*Note: must review for relevance*) describes how contractor employee representatives are protected from acts of discharge, discipline, or other acts of discrimination that result from participation in compliance inspections.

Another guidance document is OSHA's Safety and Health Program Management Guidelines. (FR 54: 3904-3916; dtd 1/26/1989)

3.3.2 Hazard identification and assessment. (851.21)

3.3.2.1 **Identify and assess risks.** (851.21(a))

The Rule requires DOE contractors to identify existing and potential workplace hazards and assess the risk of associated worker injury or illness (851.21(a)).

3.3.2.1.1 Assess workers exposures. (851.21(a)(1))

The Rule requires assessment of worker exposure to chemical, physical, biological, and safety workplace hazards through appropriate monitoring (851.21(a)(1)). This assessment should entail appropriate:

Workplace monitoring (including personal, area, wipe, and bulk sampling); Biological monitoring, and **Observation**

Guidance on workplace monitoring is provided in:

DOE G 440.1-3, Occupational Exposure Assessment, and

Mulhausen, JR and Damiano, J. A Strategy for Assessing and Managing Occupational Exposures, Second Edition, AHA Press, Fairfax, VA, 1998.

3.3.2.1.2 Document hazard assessment, (851.21(a)(2))

Contractors are required to document assessments for chemical, physical, biological, and safety hazards using recognized methods and credentialed laboratories (851,21(a)(2)). Samples should be analyzed by a laboratory that is a successful participant in American Industrial Hygiene Association accreditation or proficiency testing programs for the hazards of concern.

Monitoring results should be recorded with documentation that (1) describes the tasks and locations where monitoring occurred and (2) identifies:

Workers monitored or represented by the monitoring;

Sampling methods and durations;

Control measures in place during monitoring (including use of personal protective equipment):

Job task and location: and

Any other factors that may have affected sampling results.

3.3.2.1.3 Record results. (851.21(a)(3))

The contractor must record observations and results (851.21(a)(3)).

3.3.2.1.4 Analyze designs for potential hazards. (851.21(a)(4))

The contractor must analyze designs for potential workplace hazards (851.21(a)(4)). Incorporating worker protection features and requirements in the design and construction of facilities and equipment is the most cost-effective way to control hazards. Design reviews should be conducted by a team of engineers, operations managers and employees, and appropriate worker protection professionals. This should be initiated at the earliest design phase and continue throughout the design process to ensure that potential hazards are identified, evaluated, and, to the extent feasible, eliminated or controlled through design changes.

Worker protection professionals should be assigned review and approval authority in all four phases of project design: conceptual design, preliminary design, final design, and inspection. Review during the conceptual design phase, the earliest phase of the project, is critical. Hazard analysis methodologies can be applied to facilities, processes, equipment, and operations (including D&D) throughout their life cycle. Methodologies include:

Preliminary hazard analysis (PHA) (see section 3.3.2.1.5 for more detailed guidance on PHAs):

Health hazard analysis; Facility hazard analysis; Process hazard analysis; and Safety review.

3.3.2.1.5 Evaluate operations, procedures, and facilities. (851.21(a)(5))

The contractor is required to evaluate operations, procedures, and facilities to identify hazards (851.21(a)(5)).

Hazard identification is accomplished most effectively by workers and their supervisors during the course of daily activities, with technical assistance from worker protection professionals and functional area technical experts, as necessary.

Daily workplace evaluations by workers and supervisors include such things as inspections of tools and equipment, ranging from inspection of manual tools and power tools, forklifts, cranes, slings, and warning systems to inspection of respiratory protective equipment and other personal protective equipment prior to and during use. In addition, workplace conditions, housekeeping, utilization of assigned personal protective equipment, and conformance with procedures, work permits, health and safety plans, and other established criteria should be evaluated. Workers and supervisors should consult with worker protection professionals as necessary to address questions regarding regulatory requirements and compliance or where specific technical expertise is needed.

In addition, daily worker and supervisor evaluations should be supplemented by worker protection professional evaluations of the workplace. These routine evaluations should include both informal unscheduled walk-through evaluations conducted during worksite visits and formal, scheduled periodic workplace evaluations.

Annual evaluations are recommended at all workplaces, including permanently housed construction workplaces. The first annual evaluation should be a comprehensive "wall-to-wall" evaluation which serves as a baseline for future evaluations. Annual evaluations are conducted to identify and document existing and potentially hazardous work conditions and practices that do not comply with worker protection requirements or may otherwise pose hazards to the safety or health of workers. These evaluations should be performed by worker protection professionals with the participation of affected employees and supervisors.

An effective approach to accomplishing such an evaluation is to use a team comprised of affected employees and supervisors, as well as the worker protection professionals necessary to evaluate specific workplace hazards. Worker protection professionals required on the team may include:

Safety professionals;

Industrial hygienists;

Occupational medical professionals, and

Other worker protection professionals, as appropriate for the nature of the workplace and the hazards associated with the activities.

Alternatively, the team could include safety and health professionals cross-trained in the disciplines applicable to the workplace being evaluated. These cross-trained professionals would consult with functional area experts as needed.

The evaluation team should use worker protection hazard abatement information, information from the employee concerns program, results of baseline and previous inspections, and injury and illness data, among others, as tools for determining their strategy for such evaluations.

Preliminary hazard analyses (PHA) provide a broad hazard screening tool that includes a review of the types of operations that will be performed in the proposed facility and identifies the hazards associated with these types of operations and facilities. The results of the PHA are used to determine the need for additional, more detailed analysis, serve as a precursor documenting that further analysis is deemed necessary, and serve as a baseline hazard analysis where further analysis is not indicated. The PHA is most applicable in the conceptual design stage, but it is also useful for existing facilities and equipment that have not had an adequate baseline hazard analysis. PHAs are detailed studies to identify and analyze potential hazards associated with each aspect of the facility and related equipment and operations. The analysis should include a systematic review of each facility component and task and should consider:

Facility design characteristics such as electrical installations, platform heights, egress concerns, etc.:

Proposed equipment including types of equipment, location of equipment relative to the other operations and workers, required equipment interfaces, etc.;

Proposed operations including related hazardous substances and potential exposures, potential energy sources, locations of operations and required interfaces, resulting material and personnel traffic patterns, etc.; and

Facility and equipment maintenance requirements including confined space concerns, electrical hazards, inadvertent equipment startup or operation hazards, etc.

PHAs may identify the need for other more specialized hazard analyses such as exposure hazard analyses (see Mulhausen, JR and Damiano, J, *A Strategy for Assessing and Managing Occupational Exposures*, Second Edition, AIHA Press, Fairfax, VA, 1998.) and process hazard analyses (see 29 CFR 1910.119).

The following techniques are available to assist in the performance of PHAs:

Safety Review. A Safety Review is a technique to provide a detailed evaluation of facility operations or processes. It is used to identify hazards associated with conditions, practices, maintenance, and other pertinent aspects of the facility or process.

Change Analysis. A change analysis is performed to ensure that proposed design or operational changes do not adversely affect the safety of the facility. The analysis identifies differences between the existing and the proposed design or operational change, identifies how the change will affect related features, and evaluates the effects of the differences and relationships on the overall safety of the facility. Change analysis can be used during the design, modification, construction, or renovation phase of the facility to address proposed changes.

Energy Trace and Barrier Analysis (ETBA). The ETBA identifies potential energy sources, traces those sources to a potential hazard, and determines if the proper barriers to the hazard (i.e., controls) are in place. The ETBA provides an effective tool to identify potential hazards for the PHA.

Failure Modes and Effects Analysis (FMEA). The FMEA is a critical review of the system (facility and operations), coupled with a systematic examination of all conceivable failures and an evaluation of the effects of these failures on the mission capability of the system. The FMEA can help avoid costly facility modifications and should be initiated early in the design phase. Once performed, the FMEA provides valuable information if updated throughout the design process.

Fault Tree Analysis (FTA). The FTA is a logic tree used to evaluate a specific undesired event. The FTA is developed through deductive logic from an undesired event to all sub-events that must occur to cause the undesired event. The FTA can be applied at any point in the life of a facility. The FTA can be used to support the PHA during facility design.

Detailed information on the selection and use of various hazard analysis methodologies and techniques is available in the American Institute of Chemical Engineers' *Guidelines for Hazard Evaluation Procedures*, Second Edition, 1992.

3.3.2.1.6 Job activity-level hazard analysis. (851.21(a)(6))

Contractors must perform routine activity-level hazard analyses (851.21(a)(6)). Operations and procedures at the activity level should be analyzed and reviewed to identify potential worker

protection hazards and deficiencies. A Job Safety Analysis (JSA), or a job hazard analysis (JHA), is the most basic and widely used tool to identify hazards associated with jobs at the activity level. JSAs and JHAs can satisfy a large portion of the worker protection hazard identification requirements at most workplaces. A JSA is useful for dynamic work environments like equipment repair as well as relatively stable environments such as operating a chemical process.

JSAs should be conducted:

For existing operations and procedures that have not been adequately evaluated in the past or when there is no current hazard analysis:

In response to employee identified potential hazards; and

For existing operations and procedures that have resulted in injuries, illnesses, or near misses.

JSAs should be updated periodically to ensure that any new hazards that have been introduced since the last evaluation of the activity are addressed.

The principle elements of a job safety analysis are:

Selection of operations and progedures to be analyzed;

Breakdown of operations and procedures to their component tasks;

Identification of hazards associated with each task and the controls necessary to protect workers against those hazards:

Identification and addressing of potential hazards to bystanders and identification of related controls: and

Development of procedures incorporating identified controls.

Affected employees and supervisors should participate in the JSA process. Their knowledge of the tasks and associated hazards, and familiarity with the procedures actually used in performing the work, provides more complete information during the JSA. In addition, these front-line personnel can assist in determining the feasibility and effectiveness of proposed control measures.

Detailed information on the conduct of JSAs is presented in DOE 76-45/19 SSDC-19, Job Safety Analysis, and U.S. Department of Labor Mine Safety and Health Administration, Safety Manual No. 5, Job Safety Analysis.

3.3.2.1.7 Review safety and health experience. (851.21(a)(7))

The Rule requires the review of site safety and health experience information (851.21(a)(7)). Reporting and investigation of accidents, injuries, and illnesses and analysis of related data for trends and lessons learned is a key component of this review.

The collection of detailed, accurate data and information regarding workplace accidents, injuries, and illnesses and the subsequent analysis of the data and information are useful in identifying worker protection problem areas. This type of analysis or trending is used to identify the

prevalent types of accidents, injuries, and illnesses and their sources and causes. Information derived from trend analysis can be used to focus worker protection efforts on the actual sources of injuries and illnesses and to help prioritize hazard abatement activities. Necessary components of accident, injury, and illness data collection and analysis include:

A procedure to investigate and report occupational injuries and illnesses;

Systems and methods to collect, record, compile, and manage accident, injury, and illness data and information, including but not limited to the OSHA 200 log of occupational injuries and illnesses, workers compensation data, accident reports, incident reports, industrial hygiene and health physics exposure monitoring results, inspection reports and corrective action tracking entries:

Methodologies to analyze data and information to identify and trend accidents, injuries, and illnesses by type and source; and

A formalized approach to analyze identified trends, to determine root causes, and to develop appropriate control measures.

3.3.2.1.8 Workplace hazards and radiological hazards. (851.21(a)(8))

Contractors must consider interaction between workplace hazards (e.g., chemical, physical, biological, or safety hazards) and other hazards such as radiological hazards.

3.3.2.2 Closure facilities/hazard identification. (851.21(b))

Contractors must submit to the Head of the DOE Field Element a list of closure facility hazards and controls within 90 days of identifying those hazards (851,21(b)). The Head of the DOE Field Element, with concurrence of the Cognizant Secretarial Officer, has 90 days to accept the controls or direct additional actions to achieve technical compliance or provide additional controls. This provision provides contractors flexibility in addressing hazards in facilities that are or will be permanently closed, demolished or subject to title transfer consistent with the provisions of the National Defense Authorization Act (NDAA). In such facilities, contractors must identify facility hazards that cannot be corrected within 90 days. For these hazards. contractors have the flexibility to determine appropriate abatement actions (subject to DOE approval) based on the special circumstances associated with the facilities.

3.3.2.3 Hazard identification schedule. (851.20(c))

Contractors must perform the hazard identification tasks required by (851.21(a)) initially to obtain a baseline and then as often as necessary to ensure compliance with the Rule (851.21(c)).

3.3.3 Hazard prevention and abatement. (851.22)

An effective hazard abatement program is essential to ensure that workers are protected from exposure to current and future workplace hazards. The focus of this program must be the immediate control of identified workplace hazards. Where this is not possible, the program must ensure the protection of workers while awaiting final abatement action, and it must provide an efficient mechanism to ensure that all identified hazards are abated as quickly as possible.

3.3.3.1 Hazard prevention and abatement process. (851.22(a))

The rule requires contractors to implement a process to prevent or abate identified and potential hazards (851.22(a)).

3.3.3.1.1 During design or procedure development. (851.22(a)(1))

For hazards identified either in the facility design or during the development of procedures, controls must be incorporated in the appropriate facility design or procedure (851.22(a)(1)).

Hazards that are identified in the design phase of new facilities and facility modifications or during the development or modification of procedures should be eliminated or controlled through design or procedure changes. The controls implemented should be commensurate with the risk level identified in the risk assessment process. For example, hazards that pose a serious threat to employee health and safety should be either completely eliminated or effectively controlled.

Proposed design or procedure modifications intended to eliminate or control hazards should be reviewed by worker protection professionals to ensure that the change adequately addresses the hazard and does not introduce new workplace hazards. Alternative control measures should be evaluated to determine the reduction of risk provided by each measure and identify the most effective practical control for the hazard.

Where hazards cannot be controlled through design changes, procedural or administrative controls or the use of personal protective equipment should be considered.

3.3.3.1.2 Existing hazards. (851.22(a)(2))

For hazards identified in the workplace, abatement actions, which are prioritized according to risk to the worker, should be promptly implemented and interim protective measures should be implemented pending final abatement. Workers should be protected immediately from imminent danger conditions. Hazards should be systematically managed and documented through final abatement or control.

Hazard abatement prioritization (851.22(a)(2)(i)). The relative level of risk must be assessed for each identified hazard to ensure that hazard abatement efforts and resources are focused first on addressing the most serious workplace hazards.

Risk assessment is an essential element of effective risk management. The assignment of risk levels provides a relatively simple and consistent method of expressing the risk associated with worker exposures to identified hazards. MIL-STD-882C, System Safety Program Requirements, and Department of Defense Instruction No. 6055.1, Department of Defense Occupational Safety and Health Program, both describe a risk assessment methodology acceptable to DOE for meeting the risk assessment requirements of the Rule.

Although important in prioritization and abatement planning, assigning a risk assessment code or level to a hazard should not be an impediment to quick abatement. If a hazard can be fixed

immediately, assigning a risk category is not necessary, although organizations may prefer to assign one for trending purposes.

The determination of the priority assigned to the abatement of a specific hazard must first be based on the risk of injury or illness the hazard presents to the worker; however, other factors may be considered, including:

Regulatory compliance; Resources (budget and personnel); Complexity of abatement; and Organizational mission.

In some cases, it may be appropriate to address lower-level hazards before higher-level hazards if quick abatement is possible and effective interim protection is in place to protect workers from the higher level hazard until final abatement can be implemented.

Interim Protection (851.22(a)(2)(ii). In the interval during which an abatement action is being carried out, DOE and contractor organizations must protect their employees from the identified hazards. A short term strategy should be established that provides interim protection to employees. Methods such as administrative controls, work practice modifications, or personal protective equipment may used to provide this interim protection. These measures must provide employees with protection that is equivalent to the permanent protection that will be provided by compliance with the relevant standards in 851.23 and Appendix A to Part 851.

The level of risk associated with interim protective measures can be assessed to verify that equivalent protective measures are provided. The assessment of risk associated with interim protection, however, should not be used to lower the priority of final abatement actions. The hazard should be tracked and abated based on the initial risk assessment.

Dangerous conditions (851.22(a)(2)(iii)). In the event a dangerous condition is discovered, immediate action must be taken either to correct the condition or to remove all employees from exposure to the condition until the danger has been abated.

3.3.3.2 Hierarchy of controls. (851.22(b))

The Rule requires that hazard control methods be selected based on the following hierarchy (851.22(b)):

- 1. Elimination or substitution:
- 2. Engineering controls;
- 3. Work practices and administrative controls that limit worker exposures; and
- 4. Personal protective equipment.

When elimination or substitution of the hazard does not reduce the associated risk to acceptable levels, they may be supplemented with engineering controls. Where engineering controls do not further reduce the associated risk to acceptable levels, they may be supplemented with work

practices and administrative controls. Where necessary, these controls may be further supplemented with the use appropriate personal protective equipment.

3.3.3.2.1 Elimination or substitution. (851.22(b)(1))

Elimination or substitution of hazards must be the first choice for controlling hazards. The contractor should verify that potential hazards of the substitution are identified and addressed before deciding to proceed.

3.3.3.2.2 Engineering controls. (851.22(b)(2))

Engineering controls must be the second choice for controlling hazards after elimination or substitution of the hazard has been implemented to the extent feasible and appropriate. Principal engineering controls include:

Enclosing the bazard;

Locating hazardous operations or equipment in remote or unoccupied areas;

Establishing physical barriers and guards, and

Using local and general exhaust ventilation.

3.3.3.2.3 Work practices and administrative controls. (851.22(b)(3))

Work practices and administrative controls must be the third choice for controlling hazards after elimination or substitution of the hazard and engineering controls have been implemented to the extent feasible and appropriate. The effectiveness of work practice and administrative controls depends on the ability of line management to make employees aware of established work practices and procedures, to reinforce them, and to provide consistent and reasonable enforcement. Administrative controls include:

Written operating procedures, safe work practices, and work permits;

Exposure time limitations;

Limits on the use of hazardous materials and monitoring of such operations;

Health and safety plans;

Altered work schedules, such as working in the early morning or evening to reduce the potential for heat stress; and

Training employees in methods of reducing exposure.

3.3.3.2.4 Personal protective equipment. (851.22(b)(4))

When elimination or substitution, engineering, and work practices and administrative controls have been considered and implemented and are not sufficient to fully protect the worker from a recognized hazard, personal protective equipment must be used to supplement these other controls as appropriate. PPE is acceptable as a control method:

To supplement elimination or substitution, engineering, and work practices and administrative controls when such controls are not feasible or do not adequately reduce the hazard:

As an interim measure while engineering controls are being developed and implemented; During emergencies when elimination or substitution, engineering, and work practices and administrative controls may not be feasible; and

During maintenance and other non-routine activities where other controls are not feasible.

The use of PPE can itself create significant worker hazards, such as heat stress, physical and psychological stress, and impaired vision, mobility, and communication. An example would be a worker wearing several layers of clothing (for warmth and anti-contamination), a respirator, gloves, and a helmet while welding or cutting. This arrangement of PPE could prevent the worker from being aware of the environment in the event of a fire (for example, because of the lower heat transfer rate) or other emergency.

In these situations, engineering and/or administrative controls (e.g., a fire watch to ensure the safety of the worker as well as the property) should be implemented to supplement PPE. Equipment and clothing should be selected that provide an adequate level of protection. The selection process should involve representatives of the affected safety disciplines (e.g., health physicist, industrial bygienist, fire protection staff, etc.) working in concert with workers and supervisors.

Two basic objectives of any PPE practice should be to protect the wearer from safety and health hazards, and to prevent injury to the wearer from incorrect use and/or malfunction of the PPE. To accomplish these objectives, a comprehensive PPE program should include hazard identification (hazards that PPE will protect against and hazards caused by the use of PPE); medical monitoring; environmental surveillance; and selection, use, maintenance, and decontamination of PPE and associated training.

Purchasing equipment, products, and services. (851.22(c)) 3.3.3.3

Hazards must be addressed when selecting or purchasing equipment, products, and services (851.22(c)). Provisions should be made for worker protection professional and employee evaluation of pre-engineered or "off-the-shelf" equipment prior to selection and purchase.

This evaluation should focus on whether the equipment or procured material (e.g., parts, chemicals, or fasteners) can perform its required task without endangering the health and safety of workers (e.g., use of steel cable adequately rated for the anticipated weight of the loads) given existing facility and operational constraints. Evaluation methods can include:

Review of equipment or material specifications;

Observations of equipment or material demonstrations;

Change analyses;

Operational hazard analyses;

Ergonomic/human factor analyses; and

Checks for suspect or counterfeit parts.

Worker Protection considerations to be taken into account when reviewing equipment specifications include but are not limited to:

Health hazards:

Operating noise;

Temperature levels;

Point-of-operation guards:

Lockout provisions;

Presence of hazardous material;

Training requirements for safe operation;

Ergonomic design, worker to machine interface;

Maintenance requirements;

Availability and practicality of "add-on" (post-purchase) worker protection equipment; and Existing facility and operational constraints (e.g., floor loading, hazards from adjacent operations, congested workplaces, etc.).

After installation of complex or potentially hazardous equipment, a pre-startup evaluation with affected workers, supervisors, and worker protection professionals should be conducted to verify safe conditions and identify any previously unforeseen hazards.

3.3.3.4 Additional resources

DOE 76-45/19, SSDC-19, Job/Safety Analysis, 1979.

Center for Chemical Process Safety, Guidelines for Hazard Evaluation Procedures, 2nd Edition, American Institute of Chemical Engineers, New York, NY, 1992.

29 CFR 1910, Occupational Safety and Health Administration.

- U.S. Department of Labor, Mine Safety and Health Administration, Safety Manual No. 5, Job Safety Analysis.
- MIL-STD-882C, System Safety Program Requirements.

Department of Defense Instruction No. 6055.1. Department of Defense Occupational Safety and Health Program.

3.3.4 Safety and health standards. (851.23)

The Rule lists safety and health standards that must be complied with by the contractor when applicable to the hazards at their site (851.23). When ACGIH TLVs are used as exposure limits, contractors must nonetheless comply with the other provisions of any applicable OSHA expanded health standard.

Section 851.23(a)(1) requires compliance with the Chronic Beryllium Disease Prevention Program (CBDPP) in 10 CFR 850. In addition, to ensure consistency, 10 CFR 850 was revised as part of the same rulemaking effort to clarify that the CBDPP is considered to be an integral part of the worker health and safety Rule and that the CBDPP required under 10 CFR 850 is enforceable under 10 CFR 851.

Contractors should determine whether additional standards are needed for their workplaces and activities to control recognized hazards. If needed, contractors should include such additional

standards in their written worker safety and health program. Examples of additional standards might be ANSI C2, National Electrical Safety Code, and the ANSI B-30 Series, Cranes.

3.3.5 Functional areas. (851.24)

Contractors must make provisions in their worker safety and health program for the following functional areas that are applicable to the hazards at their site: construction safety; fire protection; firearm safety; explosive safety; pressure safety; electrical safety; industrial hygiene; occupational medicine; biological safety; and motor vehicle safety (851.24). Contractors are subject to all applicable standards and provisions in Appendix A to Part 851 to comply with these functional areas. See section 3.6 for detailed implementation guidance for the functional area requirements.

Training and information. (851.25) 3.3.6

Providing Training, (851,25(a)) 3.3.6.1

The Rule requires DOE contractors to provide workers with worker protection training (851.25(a)). Training also should be provided to supervisors, collateral duty safety and health personnel and committee members, and employee representatives that work for the contractor. Training should be included as a component of the written worker safety and health program.

3.3.6.2 Additional resources

Training Resources and Data Exchange (TRADE), http://www.orau.gov/trade/

3.3.7 Recordkeeping and reporting. (851.26)

The Rule requires contractors to:

Maintain records of hazard inventory information, hazards assessments, exposure measurements, and controls (851.26(a));

Report injuries and illnesses consistent with DOE Manual 231.1-1A Environment, Safety and Health Reporting Manual, September 9, 2004 (851.26(a)(2));

Comply with the injury and illness recordkeeping and reporting sections of the health standards in 851.23 unless otherwise directed in DOE Manual 231.1-1A (851.26(a)(3));

Neither conceal nor destroy information concerning compliance with the Rule (851.26(a)(4));

Investigate, analyze for trends (DOE Order 225.1A Accident Investigations, 1997), and report accidents, injuries, and illnesses (851.26(b)).

3.3.7.1 Hazard abatement tracking. (851.26(a))

Hazard abatement is a component of hazard assessment and control. Hazard abatement management requires a mechanism to track all planned abatement activities through to completion. Therefore, all hazards identified during worker protection evaluations should be recorded regardless of whether the evaluation was conducted by DOE, contractors, or external

agencies such as OSHA. In addition, hazards identified by employees or line management should be recorded if they are not immediately abated.

Hazard abatement information may be in any format (electronic or paper file), as long as it (1) meets its purpose of documenting identified hazards and associated corrective actions through final abatement, (2) allows for appropriate planning and budgeting decisions, and (3) is retrievable.

Hazard Abatement Information

The following elements should be included in the documentation for each hazard:

Location:

Date found:

Description of hazard:

Referenced standard in 851,23 or Appendix A to Part 851;

Planned corrective action,

Estimated cost of abatement.

Interim protective measures,

Abatement period (number of calendar days),

Scheduled abatement date.

Actual abatement date.

Risk level: and

Record identification number (unique identifying number).

In addition, the information should indicate if actual corrective action differs from planned corrective action.

Coordination. DOE Operations Offices should be kept informed of the status of abatement activities. That office should be informed quarterly about the status of hazard abatement activities requiring 30 or more days to complete. The DOE or contractor line organization should coordinate this reporting process with the Operations Office to establish reporting mechanisms acceptable to both parties. In addition, the Operations Office can request copies of the hazard abatement activity documentation at any time.

Information about accident, injury, and illness reporting and investigation are contained in DOE O 231.1, DOE O 232.1, and DOE O 225.1. Information about analysis of related data for trends and lessons learned are contained in DOE O 210.1.

3.3.8 Reference sources. (851.27)

The Rule incorporates by reference a number of American National Standards Institute (ANSI) and National Fire Protection Association (NFPA) consensus standards and DOE Directives. It also indicates where those standards are available for inspection.

3.4 Variance process (Subpart D)

3.4.1 Consideration of variance. (851.30)

The Rule allows the Under Secretary to grant variances that meet the requirements of 851.31 (851.30) after considering the recommendation of the Assistant Secretary for Environment, Safety and Health. The authority to grant variance can not be delegated.

Certain NFPA standards, as well as certain applicable DOE fire safety guidelines, include provisions for the approval of "equivalencies," which would be applicable in the implementation of the respective NFPA standards. NFPA standards in the Rule should be implemented in accordance with their embedded equivalency provisions. Existing equivalencies that were granted in accordance with the provisions of a given NFPA standard should continue to be acceptable to DOE and not require a variance. The equivalency process is separate from the variance process outlined in subpart D of the Rule.

Contractors should discuss the possibility of filing a variance application with representatives of the Head of the Field Element and the Cognizant Secretarial Office prior to filing the request in order to gain a preliminary view of the likelihood of the request being granted and the necessary supporting material. Such discussions are encouraged as a means to improve the efficient use of resources. The Head of the Field Element also should provide the CSO with its recommendation for the approval and terms and conditions (851,33) of variance applications that it supports. The Head of the Field Element should coordinate variance applications for which multiple CSOs have responsibilities for programs that would be affected by the variance.

3.4.2 Variance process. (851.31)

The Rule includes fairly detailed requirements for the variance application, its content, and additional specific requirements for different types of variances (851.31).

3.4.2.1 Variance application. (851.31(a))

Contractors desiring a variance from a safety and health standard required by 851.23 may submit a written application to the appropriate Cognizant Secretarial Officer (CSO) ((851.31)(a)). The CSO reviews the application to determine if the situation warrants a variance and the application contains the information required by 851.31(c). The CSO forwards applications that are warranted and comply with 851.31(c) to the Assistant Secretary for Environment, Safety and Health for consideration and approval. The CSO returns to the contractor applications that are not warranted or do not comply with 851.31(b) and (c). The CSP should ensure that exemptions are evaluated and decided in a timely manner.

3.4.2.2 **Defective applications.** (851.31(b))

The Assistant Secretary for Environment, Safety and Health may deny applications that do not meet the requirements of 851.31. The Assistant Secretary for Environment, Safety and Health must give prompt notice of the denied application the CSO. The CSO must notify the contractor. A denial notice must include, or be accompanied by, a brief statement of the grounds for the

denial. Denial of a defective application will be without prejudice to submitting another application. Also, the Under Secretary could return a defective application to the CSO with written directions on how to change it to make it acceptable.

3.4.2.3 Content. (851.31(c))

The Rule includes explicit requirements for the content of the variance application ((851.31(c)). All variance requests must include the name and address of the contractor and the involved DOE sites; the standard from which a variance is sought; a request for a conference if desired; a statement of how the workers were informed of the application and their right to petition the Assistant Secretary for Environment, Safety and Health.

3.4.2.4 Types of variances (851.31(d))

The Rule provides for temporary, permanent, and national defense variances with varying requirements for each one (851.31(d)).

3.4.2.4.1 Temporary variance. (851.31(d)(1))

Applications submitted for a temporary variance must be submitted at least 30 days before the effective date of a new safety and health standard and include:

The contractor's statement that the contractor is unable to comply with the standard by its effective date and why:

A statement of when the contractor expects to be able to comply with the standard and of what steps the contractor will take to come into compliance with the standard;

A statement of facts establishing that the contractor is unable to comply because of unavailability of key resources or sufficient time for construction or alteration; is taking steps to safeguard the workers; and has a program for coming into compliance as quickly as practicable.

The application should:

Identify the specific activities that would be necessary to implement the requirement for which the exemption is being requested;

Discuss the circumstances which warrant the exemption (see 3.4.3.3 below);

Provide justification that there will be no significant increase in risk to the public, facility workers, or the environment that would result from granting the exemption versus implementing the requirement;

Discuss any proposed alternatives or mitigating actions taken to provide protection from the hazard covered by the requirement;

State what benefit is realized by not meeting the requirement from which the exemption is requested;

Identify any urgent circumstances warranting the necessity for a temporary relief, as well as when compliance will be achieved, if temporary relief is requested; and

Include any additional information which is not requested above, but is helpful to understand the request and support its approval

3.4.2.4.2 Permanent variance. (851.31(d)(2))

A permanent variance application must include all the information required for a temporary variance and an additional statement showing how the conditions, practices, means, methods, operations, or processes proposed would be as safe and healthful as those required by the standard from which a variance is sought.

3.4.2.4.3 National defense variance. (851.31(d)(3))

A national defense variance application must include all the information required for a permanent variance and an additional statement showing that the variance is necessary and proper to avoid serious impairment of national defense. National defense variances will only be granted for six months unless a longer period is essential to carrying out a national defense mission. Contractors must update and resubmit applications for additional six month periods.

3.4.3 Action on variance requests. (851.32)

3.4.3.1 Procedures for an approval recommendation - Adequate applications. (851.32(a))

If the Assistant Secretary for Environment, Safety and Health recommends approval of the application, it must be forwarded to the Under Secretary. The Under Secretary must notify the Assistant Secretary for Environment, Safety and Health of approved variances. The Assistant Secretary for Environment, Safety and Health provides a copy to the Office of Price-Anderson Enforcement and notifies the Cognizant Secretarial Officer (CSO). The (CSO) must promptly notify the contractor. The notification must include the terms, or an accurate summary, of the application; the basis for approval; and a reference to the safety and health standard about which the application was submitted.

3.4.3.2 Approval Criteria. (851.32)(b))

The Undersecretary, may grant a variance only if the variance.

Is consistent with Section 3173 of the NDAA;

Would not present an undue risk to the worker's safety and health;

Is warranted under the circumstances; and

Satisfies the requirements of 851.31 for the type of variances requested.

Circumstances that could warrant granting of a variance include:

Application of the requirement in the particular circumstances conflicts with other requirements; or

Application of the requirement in the particular circumstances would not serve or is not necessary to achieve its underlying purpose, or would result in resource impacts which are not justified by the safety improvements; or

Application of the requirement would result in a situation significantly different than that contemplated when the requirement was adopted, or that is significantly different from that encountered by others similarly situated; or

The exemption would result in benefit to human health and safety that compensates for any detriment that may result from the grant of the exemption; or

Circumstances exist which would justify temporary relief from application of the requirement while taking good faith action to achieve compliance; or

There is present any other material circumstance not considered when the requirement was adopted for which it would be in the public interest to grant an exemption.

3.4.4 Terms and conditions. (851.33)

A variance may contain appropriate terms and conditions including, but not limited to, provisions that:

Limit its duration:

Require alternative action;

Require partial compliance; or

Establish a schedule for full or partial compliance.

Requests for conferences. (851.34) 3.4.5

Any affected contractor or worker may file with the Under Secretary, a request for a conference on the application. The request must include:

A concise statement of facts showing how the contractor or worker would be affected by the variance applied for;

A specification of any statement or representation in the application which is denied, and a concise summary of the evidence that would be adduced in support of each denial; and Any views or arguments on any issue of facts or law presented.

The Assistant Secretary for Environment, Safety and Health must respond to a request for a conference within 15 days and if granted must indicate the time, place, and DOE participants in the conference.

3.5 Ent	forcement	process ((Sub	part	E)).
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See for additional guidance on enforcement of the Rule.

3.6 Worker safety and health functional areas. (Appendix A to Part 851)

3.6.1 **Construction safety.** (Appendix A, Section 1)

Implementation guidance for construction contractors may be found within the relevant provisions of DOE Guide 440.1-2, Construction Safety Management Guide for Use with DOE Order 440.1.

3.6.2 Fire protection (Appendix A, Section 2)

The Rule requires that contractors implement and maintain a comprehensive, multi-faceted fire safety and emergency response program that is predicated, in part, on compliance with applicable National Fire Protection Association (NFPA) codes and standards. These codes and standards are likely to include, but not be limited to, the following:

NFPA 1: *Uniform Fire Code*, 2003 NFPA 101: Life Safety Code, 2006

NFPA 115: Standard for Laser Fire Protection, 2003

NFPA 1500: Standard on Fire Department Occupational Safety and Health Program, 2002* Standard for the Organization and Deployment of Fire Suppression Operations, NFPA 1710:

Emergency Medical Operations, and Special Operations to the Public by Career

Fire Departments, 2004*

Complete guidance on the development, adoption and maintenance of a fire safety and emergency response program that satisfies the provisions of the Rule can be found in DOE-G-440.1/E / DOE-G-420.1/B, Fire Safety Program, and DOE-STD-1066-1999, Fire Protection Design Criteria. A contractor may choose a successor version of any NFPA code and standard. DOE standard and implementation guide, if approved by the DOE Authority Having Jurisdiction for fire protection. (See DOE-HDBK-1188-2006, Clossary of Environment, Safety and Health Terms, January 2006 for definition of Authority Having Jurisdiction)

Additional guidelines on certain aspects of an acceptable fire safety and emergency services program can be found on the DOE Fire Protection website, located at: http://www.eh.doe.gov/fire/guidelines.html.

3.6.3 **Explosives safety.** (Appendix A, Section 3)

The Rule incorporates the DOE Explosives Safety Manual, DOE M 440.1-1A, Contractor Requirements Document (CRD, Attachment 2), January 9, 2006 as mandatory. DOE M 440.1-1A consists of a front part and the CRD. These two parts are identical. A comprehensive explosives safety program must implement and comply with all applicable requirements in the CRD which is the same as complying with the front part of DOE M 440.1-1A. The balance of section 3.6.3 of this Guide will use the term "the Manual" to refer to these requirements because the field more commonly uses that term.

The DOE Explosives Safety Committee, composed of many of DOE's experts in explosives safety, regularly updates the Manual to incorporate lessons learned and technological advances. The Rule explicitly points out in Appendix A, section 3, that the contractor may choose to use a successor version (when available), if approved by the DOE. Over the last 30 years, updated Manuals have often incorporated increased efficiencies and workability in the field as a byproduct of upgrading the state-of-the-art in explosive safety.

^{*}For contractors responsible for site fire departments.

DOE Order 420.1B, Facility Safety, December 22, 2005 references the Manual in addressing the design of facilities:

That contain explosives,

Within which explosives activities are conducted, or

That can be adversely affected by an explosives accident or detonation.

With the notable exception of onsite explosives storage and transportation of explosives or explosive assemblies, the Manual is not intended to govern routine construction or tunnel blasting.

Pressure safety. (Appendix A, Section 4) 3.6.4

The Rule requires that contractors establish safety policies and procedures to ensure that pressure systems are designed fabricated, tested, inspected, maintained, repaired, and operated by trained and qualified personnel in accordance with applicable and sound engineering principles. Contractors should consider pressure relief devices, piping, fittings, gauges, valves, pumps, heat exchangers and associated pressure retaining hardware to be part of pressure systems. The Rule also references specific American Society of Mechanical Engineers codes for pressure vessels. boilers, air receivers, and supporting piping systems. Contractors also should consider cryogenic, pneumatic, hydraulic, steam, and vacuum systems to be pressure systems. Vacuum systems should be included due to their potential for catastrophic failure in the event of backfill pressurization.

The provisions of the Rule do not supersede requirements in 10 CFR Part 830, Nuclear Safety Management and appropriate sections of the ASME Boiler and Pressure Vessel Code that more appropriately apply to nuclear reactors and other DOE nuclear facilities.

An Implementation Guide on Pressure System Safety has been developed in draft form by the DOE Pressure System Safety Committee and is being prepared for final review, approval and distribution. This Pressure System Safety guide is being finalized by many pressure system safety professionals throughout DOE to provide practical advice on implementing an effective program.

3.6.5 Firearms safety. (Appendix A, Section 5)

The Rule requires DOE contractors engaged in DOE activities involving the use of firearms to establish and implement a firearms safety program. For detailed guidelines on effective firearms safety programs, refer to DOE Standard 1091-96, Firearms Safety.

3.6.6 Industrial hygiene. (Appendix A, Section 6)

Consult DOE technical standard DOE-STD-6005-01 *Industrial Hygiene Practices* for additional guidance for complying with industrial hygiene requirements. Appendix A, section 6(a) of the Rule effectively addresses worker health risks in typical work areas and operations. Typical

work areas and operations tend to be fairly stable. Section 6(a) may not be sufficient for identifying worker health risks for non-routine, transient, or dynamic work operations. See section 7 of DOE-STD-6005-01 for guidance for dealing with non-routine, transient, or dynamic work areas and operations.

3.6.7 Biological safety. (Appendix A, Section 7)

Contractors should consult Extension of DOE N 450.7, The Safe Handling, Transfer, and Receipt of Biological Etiologic Agents at Department of Energy Facilities for guidance on biological safety.

References for additional guidance are:

Title 42 CFR Part 72, Interstate Shipment of Etiologic Agents, 7-21-80 (revised 10-1-00). (http://www.cde.gov/od/ohs/lrsat/42cfr72.htm)

Biosafety in Microbiological and Biomedical Laboratories. CDC/NIH publication (current edition). (http://www.cdc.gov/ncidod/dvbid/Biosafety manual rev 1994.pdf)

NIH Guidelines for Research Involving Recombinant DNA Molecules. NIH publication MSU/1998 (current edition). (http://www.njehs.nih.goy/odhsb/biosafe/nih/rdnaapr98.pdf)

Guidelines for the Safe Transport of Infectious Substances and Diagnostic Specimens. World Health Organization publication WHO/EMC/97.3 (current edition) (whalibdoc.who.int/ha/1997/WHO EMØ 97.3.pdf

Title 29 CFR 1910.1030, Occupational Exposures to Bloodborne Pathogens. (http://www.osha-slc.gov/OshStd_data/1910_1030.html)

3.6.8 Occupational medicine. (Appendix A, Section 8)

Appendix A, Section 8 of the Rule establishes the framework for an effective occupational medicine program. The written program should include, but not be limited to, mission statements, policy and procedures documents, medical protocols for clinical and other evaluations, standing orders, employee assistance programs, health-promotion and disease management programs, case-management strategies and programs, disaster and public health emergency internal and inter-community plans, mutual aid agreements, and related memoranda of understanding.

Medical records should be maintained in standardized electronic formats as much as possible. Appendix A, Section 8(f) of the Rule requires contractors to develop and maintain employee medical records, and to maintain those records in accordance with Executive Order 13335 Incentives for the Use of Health Information Technology and Establishing the Position of the National Health Information Technology Coordinator (Federal Register: April 30, 2004 (Volume 69, Number 84), Page 24057-24061, http://www.archives.gov/federal-

register/executive-orders/2004.html). That Executive Order establishes a National Health Information Technology Coordinator whose responsibility is, to the extent permitted by law, to develop, maintain, and direct the implementation of a strategic plan to guide the nationwide implementation of interoperable health information technology in both the public and private health care sectors that will reduce medical errors, improve quality, and produce greater value for health care expenditures. Several standards for electronic medical records are available and others are under development. The available standards include:

- Health Level 7 (HL7) messaging standards to ensure that each federal agency can share information that will improve coordinated care for patients such as entries of orders, scheduling appointments and tests and better coordination of the admittance, discharge and transfer of patients.
- National Council on Prescription Drug Programs (NCDCP) standards for ordering drugs from retail pharmacies to standardize information between health care providers and the pharmacies. These standards already have been adopted under the Health Insurance Portability and Accountability Act (HIPAA) of 1996, and ensures that parts of the three federal departments that aren't covered by HIPAA will also use the same standards.
- The Institute of Electrical and Electronics Engineers 1073 (IEEE1073) series of standards that allow for health care providers to plug medical devices into information and computer systems that allow health care providers to monitor information from an intensive care unit or through telephonic remote health services on Indian reservations, and in other circumstances.
- Digital Imaging Communications in Medicine (DICOM) standards that enable images and associated diagnostic information to be retrieved and transferred from various manufacturers' devices as well as medical staff workstations.
- Laboratory Logical Observation Identifier name Codes (LQINC) to standardize the electronic exchange of clinical laboratory results.
- Health Level 7 (HL7) vocabulary standards for demographic information, units of measure, immunizations, and clinical encounters, and HL7's Clinical Document Architecture standard for text based reports. (Five standards)
- The College of American Pathologists Systematized Nomenclature of Medicine Clinical Terms (SNOMED CT) for laboratory result contents, non-laboratory interventions and procedures, anatomy, diagnosis and problems, and nursing. HHS is making SNOMED-CT available for use in the U.S. at no charge to users. (Five standards)
- Laboratory Logical Observation Identifier Name Codes (LOINC) to standardize the electronic exchange of laboratory test orders and drug label section headers. (One standard.)
- The Health Insurance Portability and Accountability Act (HIPAA) transactions and code sets for electronic exchange of health related information to perform billing or administrative functions. These are the same standards now required under HIPAA for health plans. health care clearinghouses and those health care providers who engage in certain electronic transactions. (One standard.)
- A set of federal terminologies related to medications, including the Food and Drug Administration's names and codes for ingredients, manufactured dosage forms, drug products and medication packages, the National Library of Medicine's RxNORM for

describing clinical drugs, and the Veterans Administration's National Drug File Reference Terminology (NDF-RT) for specific drug classifications. (One standard.)

The Human Gene Nomenclature (HUGN) for exchanging information regarding the role of genes in biomedical research in the federal health sector. (One standard.)

The Environmental Protection Agency's Substance Registry System for non-medicinal chemicals of importance to health care. (One standard.)

Medical screening test results and other relevant data for beryllium-associated workers must be transmitted to DOE's Office of Environment, Safety and Health in electronic format (10 CFR 850.39(h) and should be provided in accordance with DOE-STD-1187-2005, Beryllium-Associated Worker Registry Data Collection and Management Guidance (http://www.eh.doe.gov/techstds/standard/recappts.html).

Appendix A, Section 8(c) of the Rule requires that the occupational health personnel be licensed, registered, or certified as required by Federal or State law where employed. Other sources of such credentials include, but are not limited to:

American Association of Occupational Health Nurses, 1994, Standards of Occupational Health Nursing Practice

American Board for Occupational Health Nurses, Inc., 10503 N. Cedarburg Road, Mequon, WI 53092-4403

American Academy of Nurse Practitioners, Capitol Station, LBJ Building, P.O. Box, 12846, Austin, TX 78711

American Academy of Physician Assistants, 950 N. Washington Street, Alexandria, VA

American College of Occupational and Environmental Medicine

American Psychological Association, Standards and Guidelines for Professional, Psychological Practice

Employee Assistance Professionals Association (EAPA), Standards and Guidelines

National Professional Counselors Association

Alcohol and Substance Abuse Counselor Association

Mental Health Counselors Association

3.6.9 Motor vehicle safety. (Appendix A, Section 9)

The U.S. Department of Labor, OSHA, provides guidance on motor vehicle safety policies and programs, applicable standards, hazard recognition and control, and additional information at http://www.osha.gov/SLTC/motorvehiclesafety/index.html.

3.6.10 Electrical safety. (Appendix A, Section 10)

The Rule requires all contractors to implement a comprehensive electrical safety program appropriate for the activities at their site (Appendix A to Part 851 Worker Safety and Health Functional Areas). The Rule further specifies that the contractor's program must meet the applicable electrical safety codes and standards referenced in 851.23. Specifically, those codes and standards include the applicable electrical safety regulations promulgated by OSHA such as Subpart S of 29 CFR 1910 for general industry operations and Subpart K of 29 CFR 1926 for construction operations as well as the National Fire Protection Association (NFPA) electrical

safety standards: NFPA 70 (National Electric Code, 2005) and NFPA 70E (Electrical Safety in the Workplace, 2004).

The purpose of the electrical safety program is to provide a sound and effective approach to electrical safety to ensure the safety and well-being of all DOE contractor and subcontractor employees, enhance electrical safety awareness and mitigate potential electrical hazards to employees, the public, and the environment associated with the use of electrical energy within any DOE site or facility.

The DOE *Electrical Safety Handbook* (DOE-HDBK-1092-2004) provides an example of an acceptable electrical safety program for DOE contractors in the Handbook's Appendix A, A Model Electrical Safety Program. As illustrated in this Model Program, the main elements of an effective electrical safety program include the following six (6) components:

Management commitment to the program;

Effective training (including baseline training) for all degrees of hazard;

Effective and complete safe electrical work practices;

Documentation for all activities,

Electrical safety engineering support, and

Oversight for the electrical safety program.

DOE contractors should refer to the Model Electrical Safety Program described in the DOE Handbook (1092-98) for more detailed guidance and suggestions on program content such as purpose, scope, and ownership; performance objectives; responsibilities, authorities, and interfaces; definitions; and implementation procedures. The Handbook also includes references for more in-depth guidance.

DOE contractors should note that the Model Program described in the Handbook is intended as guidance to assist contractors in formulating their own programs and does not represent requirements. Contactors must evaluate their own worksites, operations, and facilities and must develop an appropriate electrical safety program consistent with their specific circumstances and within the framework of their overarching health and safety program. For instance, in determining the need for, and role of, an electrical safety committee, DOE contractors may consider the Model Program's suggested provisions for the committee's roles, responsibilities, membership, and charter, but must also consider their current health and safety management structure as well as existing collective bargaining agreements in place at their facility.

While the majority of the content of the Model Electrical Safety Program is straight forward and self-explanatory, the provisions regarding the Authority Having Jurisdiction (AHJ), exemptions and waivers, and informal requests for information warrant further discussion regarding their application in the context of 10 CFR 851.

3.6.10.1 Authority Having Jurisdiction for electrical safety.

Section 4 of the Model Program defines the AHJ as the entity that interprets applicable electrical safety requirements including those established in NFPA 70 and the electrical safety provisions

of the OSHA standards. That section further states that the AHJ approves electrical equipment, wiring methods, electrical installations, and utilization equipment for compliance.

As discussed above, the Rule, in 10 CFR 851.23, defines mandatory electrical safety requirements as NFPA 70 and NFPA 70E as well as the applicable electrical safety regulations promulgated by OSHA such as Subpart S of 29 CFR 1910 for general industry operations and Subpart K of 29 CFR 1926 for construction operations. DOE's intent in 10 CFR 851 is that the technical requirements of 10 CFR 851.23 be applied consistent with the provisions of the individual standards and with the programmatic requirements of the Rule.

Specifically, DOE intends for the AHJ provisions discussed in the Model Program to apply in full to the implementation of the NFPA 70 and NFPA 70E but not necessarily to the implementation of the OSHA standards, DOE's rationale for this intent is that the AHJ provisions of the Model Program parallel those established in NFPA standards such as NFPA 70 and NFPA 70E. For example, Article 90-4 of NFPA 70 establishes that the AHJ has the responsibility to interpret rules, approve equipment and materials, and waive specific requirements of NFPA 70 or permit the use of alternate methods where such methods provide equivalent protection. NFPA 70E includes similar AHJ allowances for approval of equipment of procedures throughout its text. Thus, in mandating compliance with NFPA 70 and NFPA 70E in 10 CFR 851.23, DOE adopts the full text of the both standards including the AHJ provisions of those standards.

The OSHA standards, however, do not include similar roles for an AHJ in the implementation of OSHA requirements. Specifically, the OSHA standards do not allow for an AHJ to waive specific requirements or permit the use of alternate methods. The Rule provides that such deviations from the letter of the OSHA standards are only permitted if approved through the formal variance process outlined in subpart D of the Rule. Further, while DOE recognizes the value and encourages the use of an AHJ in assisting in the proper implementation of the OSHA standards, interpretation of those standards are not binding on DOE unless issued under the provisions of 10 CFR 851.7, Requests for a binding interpretive ruling

3.6.10.2 Exemptions and waivers of electrical safety requirements.

Section 5.6.3 of the Model Program discusses suggested provisions and procedures for the content and review of requests for exemptions and waivers from codes and regulations. As discussed in section 3.6.10.1 (of this Implementation Guide) above, the AHJ has the authority to waive specific requirements of NFPA 70 or NFPA 70E or permit the use of alternate methods where such methods provide equivalent protection consistent with the AHJ provisions of these codes. Deviations from the letter of the electrical safety requirements of the OSHA standards, however, are only permitted if approved through the formal variance process outlined in subpart D of the rule.

3.6.10.3 Informal requests for information about electrical safety.

As established in 851.8 of the Rule and discussed in section 3.1.8 of this Implementation Guide, DOE's Office of Worker Protection Policy and Programs, EH-52, provides a helpful avenue for DOE contractors to obtain technical clarifications of the Rule and related worker protection

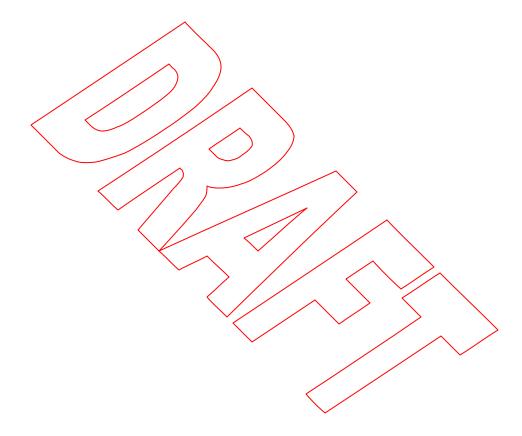
standards including the electrical safety requirements. See section 3.1.8 of this Implementation Guide for further details on this informal request for information process.

Nanotechnolgy Safety (Appendix A, Section 11) 3.6.11

Reserved.

Workplace Violence Prevention (Appendix A, Section 12) 3.6.12

Reserved.



Appendix A

MODEL WORKER SAFETY AND HEALTH PROGRAM COMPLIANT WITH 10 CFR 851

USING THE DOE
INTEGRATED SAFETY MANAGEMENT SYSTEM STRUCTURE

MODEL WORKER SAFETY AND HEALTH PROGRAM

Compliant with 10 CFR PART 851

Using the DOE Integrated Safety Management System Structure

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4 BACKGROUND

The Rule at section 851.11(a)(3) requires that the contractor's written worker safety and health program describe how the contractor will integrate all requirements of the Rule with other related site-specific worker protection activities and with their Integrated Safety Management Systems (ISMS). A straight-forward approach to meeting that requirement is to include the elements of the worker safety and health program in the Site's ISMS. Users of this Appendix will find that the worker safety and health program is only one of the many integrated programs and activities necessary for safe and effective operations. This Appendix describes a Site's ISMS that includes a model worker safety and health program. Table 1 provides a crosswalk between the sections of the Rule, the model worker safety and health program, and the Implementation Guide for the Rule.

The Department of Energy (DOE), in response to the statutory mandate of section 3173 of the Bob Stump National Defense Authorization Act (NDAA) for Fiscal Year 2003 established 10 CFR 851 Worker Safety and Health (the Rule) to govern contractor activities at DOE sites. This Rule codifies and enhances the worker protection program in operation when the NDAA was enacted. It was published in the Federal Register on February 9, 2006 (Federal Register / Vol. 71, No. 27 / Thursday, February 9, 2006.

Prior to the establishing 10 CFR 851, DOE, in response to DNFSB Recommendation 95-2, committed to implementing an Integrated Safety Management System (ISM8) across the complex by issuing an Implementation Plan in April 1996 and, subsequently, DOE Policy P450.4 in October 1996. That Policy, along with the 'Integration of Environment, Health and Safety into Work Planning and Execution" clause set forth in the DOE procurement regulations, requires DOE contractors to establish an integrated safety management system (ISMS). See 48 Code of Federal Regulations (CFR) 952.223-71 and 970.5223-1. Those procurement regulations required contractors to follow ISMS objectives, guiding principles, and functions, and to describe their approach for implementing and tailoring an ISM8 to their site/facility or activities.

The Rule at section 851.11(a)(3) requires that the contractor's written worker safety and health program describe how the contractor will integrate all requirements of the Rule with other related site-specific worker protection activities and with their Integrated Safety Management Systems (ISMS). Section 851.13(b) of the Rule clarifies that contractors who have implemented a written worker safety and health program, ISM description, or Work Smart Standards process prior to the effective date of the final Rule may continue to implement that program/system so long as it satisfies the requirements of the Rule. Hence, DOE believes that the integration of these existing programs with the worker safety and health program required by the Rule will eliminate any duplication of effort and limit any additional burden associated with the Rule. In addition, DOE recognizes that sites already integrate their safety and health program with the many other programs and activities necessary for safe and effective operations.

The ISMS described in this Appendix is a standards-based system consistent with the worker safety and health policies, rules, orders, manuals, and standards (hereinafter referred to as

Table 1 (Continued)

standards) that are applicable to DOE sites. The implementation of these standards enables this Site to conduct work in a manner that ensures protection of its workers.

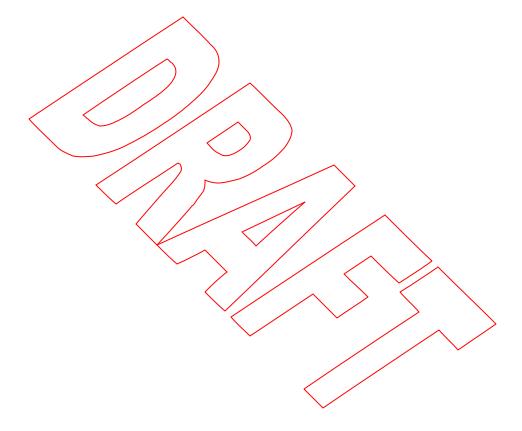


Table 1. Crosswalk Between Sections of the Rule, Model Program, and Implementation Guide

	Rule Section	Model Program		Paragraph in Body of Implementation Guide
Section Number	Section Subject	Model Program Paragraph	Model Program Bibliography Management Policies (MP), Charters, Procedure Manuals (PM), Source and Compliance Documents (SCD) in	
(Subpart C)	Specific Requirements			3.3
	Management responsibilities and worker rights and responsibilities.			3.3.1
(851.20(a))	Management responsibilities	A.4(b)(1), A.4(e), A.5(c)(1)		3.3.1.1
(851.20(a)(1))	Policy, goals, and objectives.	A.4(a), A.5, A.5(a), A.5(b) Function 5, A.5(d)	MP 1.2 Management Policies, Requirements, and Procedure System, MP 4.7 Occupational Safety Policy, MP 5.5 Site and Pacilities Management, Charter 6.11 Facility Managers Forum (FMR), Charter 6.20 Safety and Health Review Committee, Charter 6.25 Chemical Management Committee	
(851.20(a)(2))	Qualified staff.	A.4(b)(2), A.5(c)(3)	PM-4B Training and Qualification Program Manual	3.3.1.1.2
(851.20(a)(3))	Accountability	A.4(b)(3), A.5(c)(2)		3.3.1.1.3
(851.20(a)(4))	Employee involvement.	A.5(d)	MP 1.11 Open Communication, MP 4.25 Behavior Based Safety (BBS), PM-1B MRP 4.19 Requirements for Facility Operations Safety Committees, PM-8Q Employee Safety Manual	3.3.1.1.4
(851.20(a)(5))	Access to information		PM-8Q Employee Safety Manual	3.3.1.1.5

	Rule Section	Model Pro	gram	Paragraph in Body of Implementation Guide
(851.20(a)(6))	Report events and hazards.		PM-8Q Employee Safety Manual	3.3.1.1.6
(851.20(a)(7))	Prompt response to reports.		PM-8Q Employee Safety Manual	3.3.1.1.7
(851.20(a)(8))	Regular communications.		PM-8Q Employee Safety Manual	3.3.1.1.8
(851.20(a)(9))	Stop work authority		PM-8Q Employee Safety Manual	3.3.1.1.9
(851.20(a)(10))	Inform workers of rights.		PM-8Q Employee Safety Manual	3.3.1.1.10
	Budget	A 5(b) Function 1	PM-6B, Program Management Manual, PM-E11, Project Management and Control System Description Manual	3.3.1.1.11
	Additional resources.			3.3.1.1.12
(851.20(b))	Worker rights and responsibilities.		PM-8Q Employee Safety Manual	3.3.1.2
(851.20(b)(1))	Participate on official time.		PM-8Q Employee Safety Manual	3.3.1.2.1
(851.20(b)(2))	Access to information.		PM-8Q Employee Safety Manual	3.3.1.2.2
(851.20(b)(3))	Notification of monitoring results.		PM-8Q Employee Safety Manual	3.3.1.2.3
(851.20(b)(4))	Observe monitoring.		PM-8Q Employee Safety Manual	3.3.1.2.4
(851.20(b)(5))	Accompany inspections.		PM-8Q Employee Safety Manual	3.3.1.2.5
(851.20(b)(6))	Results of inspections and investigations.		PM-8Q Employee Safety Manual	3.3.1.2.6
(851.20(b)(7))	Express concerns.		MP1.11 Open Communication, PM-1B, MRP 1.06 Employee Concerns Program (ECP)	3.3.1.2.7

	Rule Section	Model Pro	gram	Paragraph in Body of Implementation Guide
(851.20(b)(8))	Decline to perform in imminent risk.		PM-8Q Employee Safety Manual	3.3.1.2.8
(851.20(b)(9))	Stop work.		PM-8Q Employee Safety Manual	3.3.1.2.9
	Informing workers through training			3.3.1.2.10
	Employee concerns		MP1.11 Open Communication	3.3.1.2.11
<	Additional resources			3.3.1.2.12
	Hazard identification and assessment.			3.3.2
(851.21)(a)	Identify and assess risks.	A.4(c)(1), A.4(c)(2), A.5(b) Function	Charter 6.33 Authorization Basis Steering Committee (ABSC), PM-11Q Facility Safety Document Manual, SCD-11 Consolidated Hazard Analysis Process (CHAP) Manual	3.3.2.1
(851.21(a)(1))	Assess workers exposures.		PM-4Q Industrial Hygiene Manual	3.3.2.1.1
(851.21(a)(2))	Document hazard assessment		PM-4Q Industrial Hygiene Manual	3.3.2.1.2
(851.21(a)(3))	Record results.		PM-4Q Industrial Hygiene Manual	3.3.2.1.3
(851.21(a)(4))	Analyze designs for potential hazards.		PM-E7 Conduct of Engineering and Technical Support	3.3.2.1.4
(851.21(a)(5))	Evaluate operations, procedures, and facilities.		SCD-11 Consolidated Hazard Analysis Process (CHAP) Manual	3.3.2.1.5
(851.21(a)(6))	Job activity-level hazard analysis.		SCD-11 Consolidated Hazard Analysis Process (CHAP) Manual, PM-8Q Employee Safety Manual	3.3.2.1.6

	Rule Section	Model Pro	gram	Paragraph in Body of Implementation Guide
(851.21(a)(7))	Review safety and health experience.		PM-1B MRP 4.14 Lessons Learned Program, PM-9B Site Item Reportability and Issue Management	3.3.2.1.7
(851.21(a)(8))	Consider other hazards		SCD-11 Consolidated Hazard Analysis Process (CHAP) Manual	
	Closure facilities hazard identification			3.3.2.2
	Hazard identification schedule			3.3.2.3
(851.22)	Hazard prevention and abatement			3.3.3
(851.22(a))	Hazard prevention and abatement process.	A.4(b)(6), A.4(b)(7), A.4(c)(3), A.5(b) Function 1, A.5(b) Function 2, A.5(c)(6), A.5(c)(6), A.5(c)(7)	MP 4.1 Environmental Assurance, MP 5.7 Configuration Management, MP 5.20 Maintenance Management, MP 5.27 Engineering and Construction Subcontracting, MP 5.35 Corrective Action Program, PM-1B MRP 4.03 Site Remote Worker Notification, PM-1B MRP 4.21 Problem Identification and Resolution Process, PM-1B MRP 4.23 Site Tracking, Analysis, and Reporting (STAR)	3.3.3.1
(851.22(a)(1))	During design or procedure development.		MP 4.1 Environmental Assurance, MP 5.36 Chemical Management, PM-E7 Conduct of Engineering and Technical Support	3.3.3.1.1

	Rule Section	Model Pro	gram	Paragraph in Body of Implementation Guide
(851.22(a)(2))	Existing hazards.	A.4(b)(6)	MP 4.1 Environmental Assurance, MP 5.7 Configuration Management, MP 5.20 Maintenance Management, MP 5.27 Engineering and Construction Subcontracting, MP 5.35 Corrective Action Program, PM-1B MRP 4.03 Site Remote Worker Notification, PM-1B MRP 4.21 Problem, PM-1Y Conduct of Maintenance	3.3.3.1.2
(851.22(b)	Hierarchy of controls.	A.4(c)(3)		3.3.3.2
(851.22(b)(1))	Substitution.		MP 4.15 Industrial Hygiene	3.3.3.2.1
(851.22(b)(2))	Engineering.		MP 4.15 Industrial Hygiene	3.3.3.2.2
(851.22(b)(3))	Work practices and administrative.		MP 4.15 Industrial Hygiene	3.3.3.2.3
(851.22(b)(4))	Personal protective equipment.		MP 4.15 Industrial Hygiene	3.3.3.2.4
(851.22(c))	Purchasing equipment, products, and services.		MP 3.3 Procurement and Materials Management, MP 5.36 Chemical Management, Procedure Manual 7B Procurement Management, PM-13B Chemical Management Manual	3.3.3.3
	Additional resources	·		3.3.3.4
(851.23)	Safety and health standards	A.4(b)(5), A.4(d), A.4(f), A.5(b) Function 3, A.5(c)(5)	Charter 6.13 Regulatory Compliance Committee (RCC)	3.3.4
(851.24)	Functional areas.			3.3.5
(851.25)	Training and information.	A.4(f)	MP 1.18 Employee Training, Charter 6.28 This Contractor's Training Managers Committee (TMC)	3.3.6
	Providing Training			3.3.6.1

	Rule Section	Model Pro	gram	Paragraph in Body of Implementation Guide
	Additional resources:			3.3.6.2
(851.26)	Recordkeeping and reporting	A.5(b) Function 5	PM-1B MRP 3.31 Records Management	3.3.7
	Hazard Abatement Tracking		MP 3.32 This Contractor Earned Value Management System (EVMS), Charter 6.11 Facility Managers Forum (FMF), PM-1B MRP 4.14 Lessons Learned Program, PM-9B Site Item Reportability and Issue Management	3.3.7.1
(851.27)	Reference sources			3.3.8
Appendix A	* / / /			
1.	Construction Safety		PM-E11 Conduct of Project Management and Control, PM - 1E6 Construction Management Department Manual	3.6.1
2.	Fire Protection		MP 4.16 Fire Protection, Charter 6.8 Site Fire Protection Committee (SFPC), PM-2Q Fire Protection Program	3.6.2
3.	Explosives Safety		PM-8Q Employee Safety Manual	3.6.3
4.	Pressure Safety		PM-8Q Employee Safety Manual	3.6.4
5.	Firearms Safety		PM-8Q Employee Safety Manual	3.6.5
6.	Industrial Hygiene		MP 4.15 Industrial Hygiene, MP 5.36 Chemical Management, PM-13B Chemical Management Manual, PM-4Q Industrial Hygiene Manual	3.6.6

	Rule Section	Model Program	Paragraph in Body of Implementation Guide
7.	Biological Safety	No biological activities on this Site	3.6.7
8.	Occupational Medicine	MP 4.3 Medical Programs	3.6.8
9.	Motor Vehicle Safety	MP 3.6 Transportation, PM-8Q Employee Safety Manual	3.6.9
10.	Electrical Safety	PM-8Q Employee Safety Manual, PM-18Q Safe Electrical Practices and Procedures	3.6.10
11.	Nanotechnology Safety-Reserved	Reserved	3.6.11
12.	Workplace Violence Prevention- Reserved	MP 2.19 Workplace Violence Policy	3.6.12

In summary, an ISMS program description containing all the features that are needed to comply with the requirements of the Rule is an ideal structure within which to embed the worker safety and health program. This Appendix was derived from a DOE site's successful ISMS program description that incorporates a model worker safety and health program.

5 PURPOSE

This Appendix describes an Integrated Safety Management System (ISMS) that ensures that safety is integrated into work performed at the Site and incorporates a model worker safety and health program that is compliant with the Rule. Section 851.11(c)(2) of the Rule requires this written safety and health program to be updated and submitted to DOE for approval annually. This is accomplished within the ISMS approval procedure. For purposes of this appendix, the term "safety" includes all aspects of safety and health management. This document and the ISMS described herein serve to implement DOE Policy P 450.4 and the revised Department of Energy DEAR Clause 970.5223-1, Integration of Environment, Safety, and Health Into Work Planning and Execution, as well as to implement 10 CFR 851 Worker Safety and Health Program.

This ISMS is a dynamic system incorporating the concept of continuous improvement that will support worker safety as the work by this Contractor's changes to meet new or revised missions of the Department of Energy.

The basic structure of ISMS (i.e., the Core Functions and Guiding Principles) is the overarching system this Contractor's uses to manage the conduct of work under the contract. From time to time, this Contractor's ISMS is enhanced and supported by the introduction of new and improved standards and improved processes. Examples of such emergent standards and improved processes include the Voluntary Protection Program (VPP- an OSHA/DOE initiative for recognizing worker safety excellence), and Behavior-Based Safety (BBS). This Contractor's ISMS previously incorporated elements of the Enhanced Work Planning (EWP) process, a DOE initiative that assigns high value to worker involvement in the planning of non-routine tasks/activities. Since EWP has become incorporated into ISM across the DOE complex, it is no longer considered a separate process. Later sections of this ISMS Description explain how these standards and processes support implementation of this Contractor's ISMS.

6 SCOPE

The ISMS described herein applies to work performed by this Contractor's under a contract, and to all work subcontracted by this Contractor, to perform work at a DOE covered workplace. If the subcontracted work is judged by DOE and this Contractor's to be sufficiently complex and/or hazardous, the subcontractor may be required by contract to have and document its own safety management system that is compatible with this Contractor's ISMS.

7 INTEGRATED SAFETY MANAGEMENT SYSTEM OVERVIEW

The DOE *Safety Management System Policy*, DOE P 450.4, subdivides the concept of the ISMS into six primary components: Objective, Principles, Functions, Mechanisms, Responsibilities, and Implementation.

MP 1.22, Integrated Safety Management System (ISMS), adopts these components as follows:

7.1 Objective:

Integrate safety into management and work practices at all levels so that missions are accomplished while protecting the public, the worker, and the environment. In other words, do work safely.

7.2 Principles:

- 1) <u>Line Management Responsibility for Safety:</u> Line management is responsible for the protection of the public, the workers, and the environment.
- 2) <u>Clear Roles and Responsibilities</u>: Clear and unambiguous lines of authority and responsibility for ensuring safety are established and maintained at all organizational levels within the Company and its subcontractors.
- 3) <u>Competence Commensurate with Responsibilities:</u> Personnel possess the experience, knowledge, skills, and abilities that are necessary to discharge their responsibilities.
- 4) <u>Balanced Priorities:</u> Resources are effectively allocated to address safety, programmatic, and operational considerations. Protecting the public, the workers, and the environment is a priority whenever activities are planned and performed.
- 5) <u>Identification of Safety Standards and Requirements</u>: Before work is performed, the associated hazards are evaluated and an agreed-upon set of safety standards and requirements are established which, if properly implemented, provide adequate assurance that the public, the workers, and the environment are protected from adverse consequences.
- 6) <u>Hazard Controls Tailored to Work Being Performed:</u> Administrative and engineering controls to prevent and mitigate hazards are tailored to the work being performed and the associated hazards.
- 7) Operations Authorization: The conditions and requirements to be satisfied for operations to be initiated and conducted are clearly established and agreed-upon.

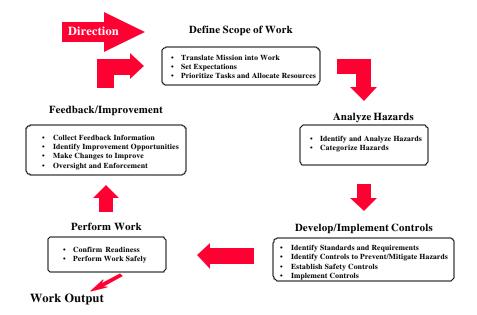
7.3 Functions:

- 1) Define Scope of Work
- 2) Analyze Hazards
- 3) Develop/Implement Controls
- 4) Perform Work
- 5) Feedback/Improvement

Figure 1 depicts the Safety Management Functions and sub-functions. Although arrows indicate a general direction, these functions are not independent, sequential functions. They are a linked,

interdependent collection of activities that may occur simultaneously. Outcomes during the accomplishment of one function may affect other functions and potentially the entire system.

Figure 1. Safety Management Functions



Additionally, the core safety management functions are integrated vertically throughout all levels (i.e. site, facility, and task-level activity) of the organizations as shown by the vertical arrows in Figure 2.

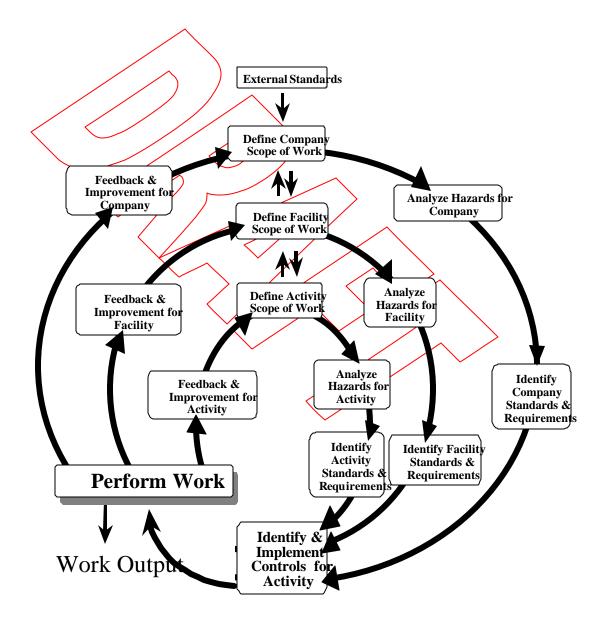


Figure 2. Application of ISM Core Functions at All Levels

The objective, principles, and functions are established and provided by the DOE and are universally applicable to all activities and operations at this Site. This ISMS is tailored to the work and organizational structure unique to this Contractor's. The ISMS provides:

Mechanisms for doing work safely; Unambiguous assignment of responsibilities; and Implementation of the objective, principles, and functions.

This Contractor's Operational Imperatives of Safety, Continuous Improvement, Disciplined Operations, Cost Effectiveness, and Teamwork support the ISMS. Those Operational Imperatives support the DOE Site Office Strategic Plan general management Focus Area objectives of Safety and Security; Technical Capability and Performance; Community, State and Regulator Relationships; Cost Effectiveness; and Corporate Perspective to manage this Site through effective teamwork internally and with the DOE and the nation.

7.4 Mechanisms

Mechanisms are the means by which agreements are reached with the DOE Site Office and the safety management functions are implemented and performed. As shown in **Figure 3**, Environment, Safety and Health Requirements in the form of laws, regulations, DOE Directives, consensus standards and others flow down from their source into this Contractor's Standards/Requirements Identification Document (S/RID). That document contains those requirements that this Contractor's and DOE agree are applicable to the work and conditions at this Site. The S/RID defines the applicability of requirements on a facility basis according to the work and hazards conducted at each facility. The contract directs that all work be conducted according to the applicable requirements in the S/RID. From the S/RID, the applicable requirements flow down to policies and procedures established and maintained by the *Integrated Procedures Management System*. These policies and procedures include controls tailored to the work/activity and the type and level of hazards present. Specific mechanisms used by this Contractor's to accomplish the ISMS Functions in accordance with the ISMS Guiding Principles are presented in Section 5. A listing of this Contractor's policies, procedures and manuals describing the ISM mechanisms is located in Section 8 of this ISMS Description.

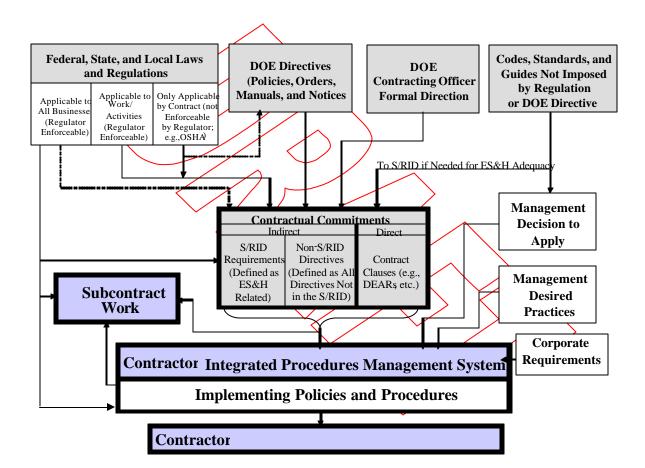


Figure 3. Site System for Flowing Down ES&H and Other Requirements to the Work

7.5 Responsibilities

This Contractor's is organized to satisfy the first Guiding Principle that Line Management is responsible for safety. Unambiguous lines of responsibility within this Contractor's are paramount to effective safety management at this Site. The second Guiding Principle, that roles and responsibilities are clearly defined, is satisfied in the *Integrated Procedure Management* System by the assignment, within each procedure, of functional responsibilities and approval authorities for each proceduralized activity. From a mission perspective, organizational mission statements are developed for all levels of the company as part of the site Program Management process (Procedure Manual 6B). This Contractor's satisfies the third Guiding Principle by staffing the organization with personnel having competence commensurate with their responsibilities (Procedure Manuals 4B, 5B, and 1Q). Reporting to this Contractor's President are personnel having appropriate line management authority for their areas of responsibility. Line Management has primary responsibility for safely operating facilities and conducting activities. Figure 4 displays the organizational structure and the primary services provided by each Business Unit.

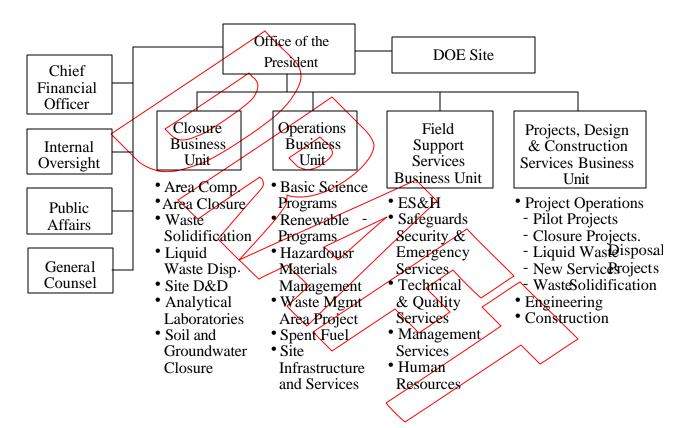


Figure 4. Contractor Functional Organization Structure

7.6 **Implementation:**

The strategy for implementing the ISMS continues to be the use of site-wide programs. These site-wide programs meet the DOE's and this Contractor's shared objective, principles, and functions for tailoring requirements to safely accomplish specific work at specific facilities. This Contractor's Integrated Procedures Management System (IPMS), depicted in Figure 3, with the policies and procedures created and maintained within that system, serve as the vehicle for implementing the objective, principles, and functions of the ISMS. Environment, Safety and Health program requirements, including Safeguards and Security requirements, are incorporated into the implementation of the work, using the IPMS, through the process illustrated in Figure 5.

To enhance ISMS implementation, the following ISMS-specific courses are available to Site personnel:

ISMS Overview – Computer-Based Training (CBT) version; ISMS General (for Workers, Professionals and Managers); and ISMS Executive Orientation.

Integrated Procedures Contract Management System Work **Contractor Programs** ES&H Program Procedures Conduct of Examples Requirements **Operations** Radiological Management Policies & Requirements, Work Permits Human Resources, Quality Assurance, Management Systems •Procedures for: Program Management, Budgeting & Planning Quality Assurance - Operating Assessment, Procurement, Fire Protectio Conduct of Configuration Management - Alarm Response Compliance Assurance, Industrial Hygier Training & Qualification **Training** - Emergency Issue Management & Reporting, Emergency Management - Abnormal Configuration Management, Safeguards & Security* Environmental Compliance, Engineering Personnel Radiation Control, Employee Safety, **Conduct of** Construction Examples Emergency Plan/Management, Maintenance Operations S/RID •Operator Safeguards & Security,* Maintenance Supervisor Facility Safety Documentation, Radiation Protection •Manager Nuclear and Process Safety, Fire Protection Engineer Facility D&D, Conduct of Packaging & Transportation Waste Acceptance Criteria, Plant **Environmental Restoration Engineering** Hazardous Waste Operations, Facility Disposition Examples Material Control & Accountability, Waste Management AssistedHazards Safe Electrical Practices and Procedures Research & Development Analysis Transportation Safety, **Nuclear and Process Safety** Conduct of *Work Control for: Project Management & Control Occupational Safety & Hygiene Work** Modifications **Environmental Protection** - Mechanical - Electrical -I&C, etc. * Safeguards & Security Requirements

Figure 5. How Environment, Safety, and Health Requirements Are Incorporated Into Work

8 INTEGRATED SAFETY MANAGEMENT SYSTEM MECHANISMS

This Section describes how Environment, Safety and Health programs are incorporated into the work. This Section also links the Department of Energy's safety objective, principles, and functions with this Contractor's implementing strategy and responsibilities discussed earlier. Figure 6 illustrates the primary company-level manuals and procedures that define the mechanisms that direct the safe conduct of work at all facilities, for all activities and organization levels, covered by this Contractor's Contract, which itself is a mechanism. Also described are the roles the primary manuals serve in satisfying the ISMS Core Functions and Guiding Principles. Vertical integration is illustrated by the flowdown of ISMS requirements to the primary company-level procedural mechanisms (manuals) and other supporting company-level manuals and procedures. The following manuals serve as primary vertical integrators:

Are Implemented Directly Via the non-ESH (i.e., non -S/RID) Provisions

of the Contract

Cleanup/D&D

Procedure Manual 6B, Program Management Manual;

Procedure Manual 11Q, Facility Safety Document Manual – (Procedure Manual 7Q, Security Manual for Safeguards and Security vulnerabilities);

Procedure Manual 8B, Compliance Assurance Manual;

Procedure Manual 2S, Conduct of Operations Manual;

Procedure Manual 1Y, Conduct of Maintenance Manual; and

Procedure Manual 12Q, Assessment Manual.

Horizontal integration is illustrated by the Manuals which cross-cut all of the Core Functions. There are five Manuals of this type.

Management Policies (selected Policies);

Procedure Manual 1B, Management Requirements and Procedures (selected procedures);

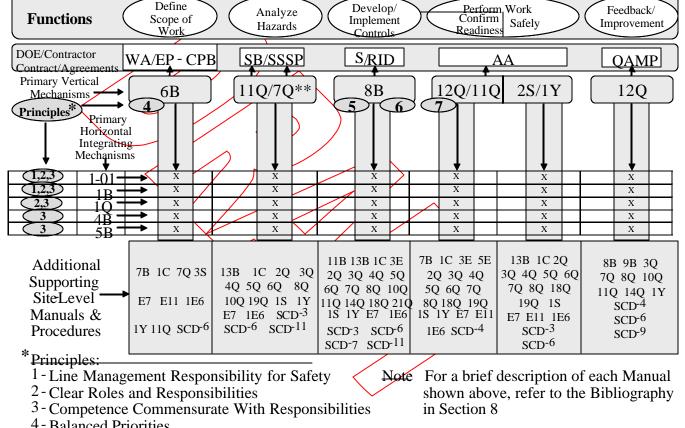
Procedure Manual 1Q, Quality Assurance Manual,

Procedure Manual 4B, Training and Qualification Program Manual, and

Procedure Manual 5B, Human Resources Manual

The ISMS roles served by the primary ISMS Manuals above and the additional supporting Manuals and Procedures, as illustrated in **Figure 6** are described in detail in this Section and in Section 8 below.

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- 4 Balanced Priorities
- 5 Identification of Safety Standards and Requirements
- 6-Hazard Controls Tailored to Work Being Performed
- 7 Operations Authorization

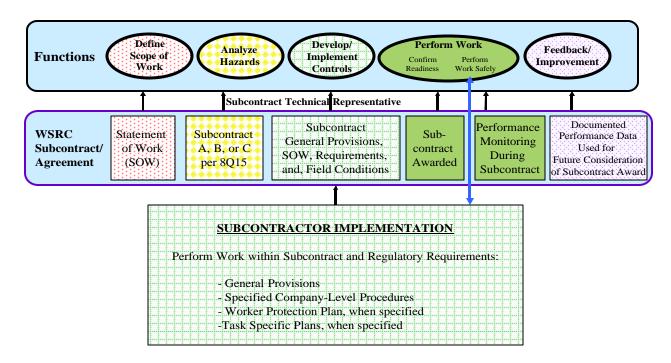
The mechanism for Safeguards & Securi Vulnerability and Risk Analyses is the Security Manual (Procedure Manual 7Q)

Figure 6. ISMS Mechanisms Used By This Contractor

For work performed by subcontractors, Procedure Manual 7B, Procurement Management Manual: Procedure Manual 11B. Subcontract Management Manual: Procedure Manual 3E. Procurement Specification Procedure Manual; and Procedure Manual 8Q, Procedure 15, Safety and Health Program for Site Visitors, Vendors, and this Contractor/BSRI Subcontractors direct the specification and documentation of safety and health requirements in purchase requisitions and Subcontract Statements of Work. The Site Requirements for Services Subcontracted Scope (SR3S) database is invoked by Manual 3E to assure the flowdown of appropriate Contractor S/RID requirements into subcontracts. That database, accessible on this Site's intranet, assists preparers of procurement Statements of Work (SOW) by providing pre-prepared text that describes requirements for certain key SOW activities. The prepared texts contained in this database were developed by the cognizant Functional Area Managers and subject matter experts. Procedure Manual 8Q, Procedure 15, Workplace Safety and Health Program for Site Visitors, Vendors, and this Contractor/Subcontractors establishes responsibilities and requirements to

ensure visitors, vendors, and subcontractors are provided a safe work environment while at this Site. That procedure and Procedure Manual 7Q, *Security Manual*, establish Point of Entry requirements that include presentation of General Site Safety, Security, and Radiological Point of Entry briefings for all non-photo (temporary) badged personnel prior to entry onto the Site. **Figure 7** illustrates that, to comply with the ISM DEAR Clause, 970.5223-1, located in the Contract, subcontracts contain the mechanisms necessary to inform and hold subcontractors accountable for implementing the appropriate requirements for which this Contractor is responsible regardless of who performs the work.

Figure 7. Subcontract ISMS Mechanisms
SUBCONTRACT ISMS MECHANISMS



8.1 Approval of Company-Level Policies and Procedures

The Site Policy and Procedure Council (SPPC) serves as the single point of authority for authorizing the preparation of company-level policies and procedures that will involve additional requirements or increased cost. The SPPC identifies and involves other area project, functional, and department managers, as appropriate, in the review of proposed changes to procedures. Primary responsibilities for managing company-level policies and procedures is assigned to Functional Managers responsible for the program administration and management of the content of company-level policies and procedures, and who report directly to Business Unit Directors or the Office of the President. The Functional Managers effectively integrate the formulation and implementation of company-level policies, procedures, and processes, and review and approve

company-level policies and procedures. The SPPC identifies and involves affected Area Project and Functional Managers in the review of proposed changes to procedures. The SPPC reviews requirements and cost/schedule impacts with the affected Functional Managers and resolves any associated issues and to authorize the procedure coordinator/author to proceed with preparation of procedures that will add requirements or increase costs.

Additional committees, (see Section 8, this Contractor's Charters) provide input to company-level policy and procedure reviews and recommendations, and promote communications, networking, and lessons learned sharing that aids effective implementation of changes. The committees provide technical guidance to site-wide programs and foster integration of mutually acceptable concepts among the site programs and across organizational boundaries. The Site Policies and Procedures Council Charter is embedded in Procedure Manual 1B, MRP 3.26.

8.2 Role of Company-Level Mechanisms in Implementing the ISMS Functions

FUNCTION 1: Define Scope of Work

Primary Company - Level Procedural Mechanism;

							1	<u> </u>
Procedure Manual 6B	Program Management	Ma	ınual	Functi	onal	l Manager. N	Ianagement	Services

Related Agreement Mechanism(s): Contract; Work Authorization/Execution Plan (WA/EP), Site Safeguards and Security Plan (SSSP)

Discussion:

The *Program Management Manual* (Procedure Manual 6B) contains the mechanisms by which this Contractor determines what work will be accomplished given the priority of the work and the available funding. The *Work Authorization Document*, described in that manual, authorizes a performing organization to execute a defined scope of work. According to the Contract, the general management goals and objectives for the Site are outlined in the Site Strategic Plan and the Performance Management Plan (PMP). The Site Strategic Plan addresses goals and objectives for the site, including those of the DOE Program Office. The EM PMP addresses the Accelerated Clean-Up objectives. In accordance with the Performance Evaluation Management Plan (PEMP), this Contractor performance of the DOE Program Office work will continue to be evaluated against PBIs, whereas performance of EM work will be evaluated against EM Clean-Up Objectives. An EM Contract Performance Baseline (CPB) defines the scope of work under prescribed cases and the associated Budgeted Cost of Work Scheduled (BCWS)

This Contractor's Site Management Control System (MCS) is this Contractor's process used to manage and integrate the mission requirements by this Contractor's team, and its subcontractors. The MCS transforms mission and requirements into a baseline consisting of scope, schedule, cost and performance metrics. It also provides a prioritization process to ensure a balanced approach to line and support tasks and resources, and ensures that safety management is integrated into the budget process. The MCS provides the management structure for planning, integrating and accomplishing goals by organizing and defining the scope of work into a Work Breakdown Structure (WBS) and an Organization Breakdown Structure (OBS).

The WBS is a task or product oriented hierarchical tree that includes all authorized contract work and defines the end products and deliverables in manageable units of work. The clearly defined units of work are then integrated with a responsibility assignment matrix with the cross support of support organizations to align the proper technical disciplines with the appropriate elements of responsibilities. This Contractor is organized such that the functional departments are staffed with the unique core personnel required to perform the primary duties associated with the Site program requirements. Authorized work is assigned to a department based upon the nature of the work. The Organizational Breakdown Structure (OBS) identifies this Contractor's organizations required to fulfill the Work Authorization/Execution Plan (WA/EP) requirements. An OBS is used to assign responsibility to this Contractor's the various organizations required to plan and control the work. The SPPC approves this Contractor's Manual 6B procedures necessary to implement these activities.

The *Program Management Manual* (Procedure Manual 6B) also specifies use of the *Project Management and Control System Description Manual* (Procedure Manual E11), which establishes the site responsibilities and requirements for a process to perform cost effective planning, control, and execution of projects using a risk-based approach. That procedure is applicable to all projects at this Site managed by this Contractor. For the purposes of that procedure, a project is defined as a unique effort that supports a program mission with defined start and end points, undertaken to create a product, facility, or system with interdependent activities planned to meet a common objective/mission. Projects include planning and execution of construction, renovation, modification, soil and groundwater closure projects, or decontamination and decommissioning efforts, and large capital equipment or technology development activities. When modifications are necessary, Project Managers are directed by the *Conduct of Modifications Manual* (Procedure Manual 3S).

Early in the project/modification or proposed activity planning, a Safety Basis (SB) Strategy is developed according to Manual 11Q, Procedure 1.10. The SB Strategy establishes the approach to be taken with regard to scope, strategy, materials, and methods that will become prime factors of the facility or activity Safety Basis.

An initiative of this Contractor, Disciplined Conduct of Projects (DCOP), is implemented primarily in Procedure Manual E11, *Conduct of Project Management and Control* to address self-identified project management issues involving leadership, accountabilities and authorities, procedural compliance, and project scope control.

A Facility Evaluation Board – Project Review Team (FEB-PRT) has been established as part of the DCOP initiative to independently assess this Contractor's project compliance with standards, controls, and procedures to promote discipline and continuous improvement in the accomplishment of projects.

At the site level, this Contractor and DOE-Site Line and Program Management utilize a prioritization process to decide which work scopes will be executed with the available funding. This process ensures that significant risks and safety hazards are identified, reviewed, and

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factored into critical funding decisions to ensure balanced priorities. The mechanism for setting expectations for the work under the Contract is described in the Contract.

The Site Safeguards and Security Plan (SSSP), as described in the Security Manual (Procedure Manual 70), is used in addition to the WA/EP for defining the scope of S&S work and allocation of resources. The SSSP must be approved by DOE-Site, DOE-Headquarters Program Office with concurrence by DOE Headquarters Safeguards and Security Office.

FUNCTION 2: Analyze Hazards

Primary Company - Level Procedural Mechanism:

Procedure Manual 11Q*	Facility	Safety Dol	Functional Services	Manager: Technical and Quality

^{*}The mechanism for analyzing Safeguards and Security Threats and Vulnerabilities, which are treated as hazards in ISMS, is Procedure Manual 7Q, Security Manual

Related Agreement Mechanism(s): Safety Basis Documentation, Vulnerability Analysis Reports and Site Safeguards and Security Plan (SSSP)

Discussion:

The Facility Safety Document Manual (Procedure Manual 11Q) is the primary document that specifies the process for determining facility hazard categories and specifies how to tailor the type and level of Safety Documentation to the type and level of hazards. That manual also specifies the documentation process to establish the safety envelope and approval authorities for Safety Basis documents. Additional guidance on the analysis and documentation of hazards is given in SCD-11, Consolidated Hazards Analysis Process (CHAP) manual described below.

In the area of Safeguards and Security (S&S), vulnerabilities and threats are treated much the same as traditional safety hazards. The Security Manual (Procedure Manual 7Q) is the primary document that specifies the process for determining the levels of threats and specifies how to tailor Safeguards and Security controls to the type and level of threat. The Vulnerability Analyses in the Site Safeguards and Security Plan (SSSP) serve as the S&S analog to Safety Basis documents. The SSSP must be approved by DOE-Headquarters Program Office with concurrence by DOE Headquarters Safeguards and Security Office.

After a scope of work is defined, the hazards of specific work elements for facility modifications, new facilities, and new non-facility projects/activities are identified, and a Safety Basis Strategy is established according to Manual 11Q, Procedure 1.10. Once identified, hazards are analyzed and categorized by type and quantity as a basis for determining the documentation standards applicable to the work. The term Safety Documentation is used to describe this documentation. The Facility Safety Document Manual (Procedure Manual 11Q) addresses process hazards to workers, the public and the environment. The hazards analysis provides the foundation for identifying standards, requirements, and engineered controls needed to prevent/mitigate identified hazards. This foundation is a crucial element of the standards selection aspect of this

^{**}Procedure Manual 11Q procedures that implement the USQ Program (per 10 CFR 830, subpart B) must be approved by DOE.

Contractor's Site Standards/Requirements Identification Document (S/RID), in that applicability of requirements is tailored largely to facility hazard categories. Functional Area 00 of the S/RID explains this aspect in detail and includes the identification of Site facilities within each hazard category. Linking Documents (per Procedure Manual 11Q, Procedure 1.06) are used for all Hazard Category 1, 2, and 3 Nuclear Facilities to identify the linkage between Safety Basis requirements and the documents that implement the requirements.

Line Management is responsible for the hazard analyses (a term used broadly here to include Safety Documentation and associated limits), change management of safety documentation, and assuring that the operation is within the safety envelope parameters (for nuclear facilities these are set forth in the Safety Basis). For nuclear facilities, the Unreviewed Safety Question (USQ) process (Procedure Manual 11Q, Procedure 1.05) is the mechanism that ensures proposed changes can be conducted within the bounds of the approved Safety Basis. The analysis of inadvertent nuclear criticality hazards is addressed by this Contractor's *Nuclear Criticality Safety Manual* (this Contractor's-SCD-3).

The Consolidated Hazards Analysis Process (CHAP) Manual, this Contractor's-SCD-11, focuses the multiple "Analyze Hazards" program requirements from several Functional Areas (including, but not limited to, Occupational Safety and Health, Nuclear and Process Safety, Emergency Management, Environmental Protection, Fire Protection, Safeguards and Security, Radiation Protection, Packaging and Transportation) into a Consolidated Hazards Analysis Process (CHAP). Part of this Manual is a tool called "Hazmap" that identifies and defines, for project planners, the characteristics of the various hazards analyses required at each stage of the life cycle of a facility from the conceptual, design and construction project, through the operational and finally, the D&D phases. The second part of CHAP integrates and consolidates much of the analytical processes and data into a tighter, more unified process that reduces duplication, overlap and inconsistencies in large complex projects. Although the use of CHAP is optional (at the discretion of the Project Manager according to project complexity for new facilities and major facility modifications), it has been fully implemented by one this Contractor organization and has been applied successfully to several projects in other organizations. Project Managers may elect to prevent/control overlap, duplication, and inconsistencies in the hazards analyses without using CHAP for relatively smaller and simpler to manage projects.

At the activity/task level, implementation of an Assisted Hazards Analysis (AHA) process described in Procedure Manual 8Q, Procedure 120 is complete. The AHA process is an enhanced method for the assessment of safety, environmental, and radiological hazards associated with specific tasks, and the identification of controls needed to safely perform those tasks. The AHA process uses a graded approach, based on the complexity of the tasks, to define the level of involvement required for the completion of the AHA. Regardless of the complexity of the tasks, an AHA determination is required to ensure that the scope of the job is defined, the hazards are analyzed, and the controls are identified prior to performing work. The AHA Process, utilizing participation of workers in the identification of hazards, is directed by 8Q, Procedure 120 for work controlled by Procedure Manual 1Y, 8.20 for Maintenance work, Procedure Manual D3 for Site Utilities work, Manual C2, Procedure 2.05 for Site D&D work, and for other stand-alone work not controlled by Manuals 1Y, D3, or C2. Following completion of the AHA and establishment of all identified controls, commencement of the work may be

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authorized by the Shift Manager's approval signature on the Safe Work Permit. Additionally, pre-job briefings are required to be conducted before the work is executed.

More implementation details on Function 2 are presented below in Section 5 (d) "Protection of the Workers, the Public and the Environment." The Security Manual (70) specifies the measures necessary to determine appropriate protection of nuclear materials commensurate with the attractiveness of the materials for theft or diversion.

FUNCTION 3: Develop/Implement Controls

Primary Company-Level Procedural Mechanism:

Procedure Manual 8B	Complia	nce Assur	Functional Services	Manager: Technical & Quality

Related Agreement Mechanism(s): Standards/Requirements Identification Document

Discussion:

The Compliance Assurance Manual (Procedure Manual 8B) details how all standards and requirements are documented, their applicability is determined, and this Contractor's compliance is assessed. The mechanism for cataloging ES&H requirement applicability for all facilities operated under the Contract is the Standards/Requirements Identification Document (S/RID), a document approved by the DOE Site Office. This Contractor's S/RID, which lists applicable ES&H requirements, and another document entitled *Applicable Non-ESH DOE Directives* are both incorporated into the Contract by reference. The Rule will be included in this list of requirements incorporated into the Contract but will be complied with regardless of the Contract because it is enforceable under PAAA. This also is true for Title 10 CFR 850 Chronic Beryllium Disease Prevention Program because it is "deemed an integral part of the worker safety and health program under part 851" and is enforceable under PAAA (10 CFR 850.1 and 10 CFR 850.4 February 9, 2006 revision). This Contractor's S/RID also may include optional standards identified in this Guide or other standards this Contractor and the DOE Site Office agree are needed.

The majority of the DOE Directive requirements that drive Safeguards and Security (Procedure Manuals 7Q, 10Q, and 14Q); Program Management (Procedure Manual 6B); and Headquarter Program Office-specified requirements are on the Non-ESH List. The contractually-driven requirements in the non-ESH List are mandatory unless exemptions are granted by the cognizant DOE-HQ office. Together, the S/RID and the Non-ESH List represent what is termed 'List B' in DEAR 970.5204-2. That DEAR Clause also defines an optional 'List A', a list of "...Applicable Laws and regulations..." A formal 'List A' is not documented; however, this Contractor's S/RID includes those applicable laws and regulations that are ES&H requirements. Of course, this Contractor is obligated to follow all applicable laws and regulations regardless of their presence on any list. The S/RID and the Applicable Non-ESH DOE Directives list are both administered by Procedure Manual 8B which directs that both are accessible on this Site's intranet system.

Any change to the S/RID requires this Contractor and DOE-Site formal approval through an S/RID Change Package. Refer to Functional Area 00 of this Contractor Site S/RID for additional discussion of the development, maintenance, and compliance activities associated with the S/RID. S/RID Functional Area 00 also contains listings of facilities grouped by hazard types and levels in a way that facilitates tailoring of the hazard control standards and requirements to the work and hazards at the listed facilities. The *Facility Safety Document Manual* (Procedure Manual 11Q) contains the hazard categorization criteria mechanisms for deciding which facilities appear on the various lists. Similarly, the Security Manual (this Contractor 7Q) contains the procedures that tailor levels of protection commensurate with the potential security risks and vulnerabilities.

Procedure Manual 8B describes a part of the S/RID process whereby a Table 2 is developed to list this Contractor's manual or procedure that implements each requirement contained in Table 1 (S/RID). This Contractor's Integrated Procedures Management System (IPMS) shown in **Figures 3 and 5** provides the procedural controls for work to be accomplished in compliance with the S/RID requirements.

FUNCTION 3: Perform Work

Primary Company-Level Procedural Mechanism:

Procedure Manual 11Q	Facility Safety Document Manual	Functional Manager: Technical & Quality Services
Procedure Manual 12Q	Assessment Manual	Functional Manager: Technical & Quality Services
Procedure Manual 2S	Conduct of Operations Manual	Functional Manager: Internal Oversight
Procedure Manual 1Y	Conduct of Maintenance Manual	Functional Manager: Technical & Quality Services

Related Agreement Mechanism(s): *Authorization Agreements* for selected facilities per Procedure Manual 11Q, 1.08 are required by paragraph H.15 of the Contract.

Discussion:

The Assessment Manual (Procedure Manual 12Q) defines the Mechanisms for confirming readiness to do work prior to startup or restart, establishes the basis for confirming readiness, identifies specific confirmation processes, and designates approval authorities. The specific confirmation processes are accomplished by conducting performance-based assessments at the facility/activity by observing qualified operators doing work using authorized procedures. The readiness confirmation process ensures that work may be conducted safely and in accordance with all S/RID and other contractual and regulatory requirements.

Operations at selected facilities (facilities of primary concern) are specifically authorized by Authorization Agreements (AAs) per the *Facility Safety Document Manual* (Procedure Manual 11Q, Procedure 1.08). AAs state the bases for DOE's decision to authorize the specific scope of operations specified in the AA. The AA also contains the terms and conditions incumbent on

this Contractor to ensure the facility can be operated while protecting the environment and the health and safety of the workers and the public.

The Conduct of Operations (Procedure Manual 2S) and Conduct of Maintenance (Procedure Manual 1Y) manuals describe the Mechanisms for performing work safely following startup authorization and confirming readiness on a day-to-day basis at the facility/activity level. This is accomplished by Plan of the Day, Plan of the Week, pre-job briefings, shift turnover meetings, and work control programs.

The Conduct of Operations Manual (Procedure Manual 2S) sets forth this Contractor's operational standards at the activity/task level for: content, format and procedure approval; communication and notification; training; and shift and facility operations. The Conduct of Maintenance Manual (Procedure Manual 1Y, Procedure 8.20) establishes a Work Control System (WCS) that ensures safety is planned and integrated into maintenance activities at the work-site level, and it implements the Computerized Maintenance Management System (Passport) that supports the work control processes.

Procedure Manual 1Y, Procedure 20.01, *Project Specific Addenda*, and Procedure Manual 2S, Procedure 6.1, *Alternate Implementation Approval* provide for documenting, reviewing and approving deviations, exceptions, and alternate implementation methods (from portions of the 1Y and 2S Procedure Manuals) for facility and non-facility activities and processes where: 1) the activity or process being performed is significantly different from that described in the 1Y and/or 2S Manuals, 2) the degree of risk associated with the exception/alternate implementation method is low and the financial impact of implementation is so high that meeting the requirements in the manner stated in these Procedure Manuals is not warranted. In either case, the alternate implementation method or deviation must meet established DOE Order and S/RID requirements or DOE authorization must be obtained to deviate from established requirements.

Use of the Assisted Hazard Analysis (AHA) process, described in Procedure Manual 8Q, Procedure 120, integrates the Hazard Analysis into the maintenance work planning process (1Y, 8.20), the Site Utilities work planning process (Manual D3), the Site D&D Work Control process (Manual C2, 2.05), and other stand-alone work not covered by Procedure Manuals 1Y, D3, or C2. The Construction Management Department Manual (Procedure Manual 1E6) specifies safety practices that address worker protection for personnel performing construction work, and construction engineering practices that help ensure the safety of the end user of the project. The Conduct of Research and Development Manual, this Contractor-IM-97-00024, aligns the unique nature of R&D work to the five ISMS Functions and provides guidance to researchers on the use of ISMS mechanisms for R&D work. Regardless of the type of work to be done (i.e., Maintenance, Utilities, D&D, etc) the work control processes used are consistent with the Ouality Assurance requirements contained in Procedure Manual 10, Procedure 9-4 Work Processes, and the Hazard Analysis requirements located in Procedure Manual 80, 120, Hazard Analysis. [Note: Effective 7/29/05, Procedure Manual 8Q, 122, Hazard Analysis (interim) was issued to replace 8Q, 120 over a six-month period. This new procedure includes, among other improvements, the use of a Safe Work Permit (SWP). The SWP, issued for a specified scope of work, serves to document and ensure the communication (via pre-job briefings) of the identified hazards, the applicable controls, and the authorization status of the work among the Lead Work

Group Supervisor/Manager, the Shift Manager, and the Workers who must all sign the SWP. The SWP serves to ensure the required controls are in place and remain intact for the duration of the execution of the defined scope of work, and includes a feature for suspension of the SWP and notification of all parties who signed the SWP when a Stop Work Order is issued or a "Time Out" is taken. When the issue has been resolved, the SWP can be re-authorized to resume work.

Line Management is responsible for tailoring site-wide safety programs to facility work using the Conduct of Operations Manual (Procedure Manual 2S) and the Conduct of Maintenance Manual (Procedure Manual 1Y) as basic operational doctrine (Figure 5). Each Line Manager clearly communicates performance expectations for Conduct of Operations and Maintenance to all workers. Facility personnel are responsible for following procedures that prescribe the controls necessary to perform work safely. Only qualified personnel are allowed to operate and maintain this Contractor facilities and equipment, except personnel in-training in directly-supervised training situations. Qualified personnel have been trained to pay particular attention to safety during performance of work and to use appropriate procedures that assure work is performed safely and in accordance with all SRID and other contractual and regulatory requirements.

FUNCTION 5: Feedback/Improvement

Primary Company - Level Procedural Mechanism:

Procedure Manual 12Q	Assessment Manual	Functional M Services	Ianager:	Technica	l and Quality
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Related Agreement Mechanism(s): *Authorization Agreements* for selected facilities per Procedure Manual 11Q, 1.08 are required by paragraph H.15 of the Contract.

Discussion:

The Assessment Manual (Procedure Manual 12Q) describes a requirements-based two-tiered system consisting of a) Management Assessment, based on 10 CFR 830.120 Subpart A, (QA Rule) and DOE O 414.1B Criterion 9, comprised of self-assessments (see Procedure Manual 12Q, SA-1) and performance analysis (see Procedure Manual 12Q, PA-1) using strong Line Management involvement; and b) Independent Assessment (see Procedure Manual 12Q, FEB-series procedures) based on 10 CFR 830.120 Subpart A, and DOE O 414.1B Criterion 10, Independent Assessment: a consolidated, multi-disciplined, independent, company-level ISM Evaluation (ISME) activity, performed by Facility Evaluation Boards. The expectation basis for assessments in both tiers is documented in Assessment Performance Objectives and Criteria (this Contractor-SCD-4). These Performance Objectives and Criteria (POC) are linked to a "smart sample" of requirements from this Contractor's Standards/Requirements Identification Document (S/RID) as implemented by company-level Procedure Manuals. Assessments using POC selected from SCD-4 have proven appropriate for the following purposes:

Demonstration of readiness for nuclear activity startup or restart;

Effective identification of deficiencies and opportunities for performance improvement through self-assessment and independent oversight of operational activities;

Providing a focus for management to evaluate performance data; and

Demonstration of field adherence to this Contractor policies and procedures when applied to operational activities.

The SCD-4 Functional Areas for assessments are listed in the table below:

Contractor-SCD-4 FUNCTIONAL AREAS

Contract year in city of the first in the first							
Functional Area (FA)	Title	FA	Title				
01	Design	13	Emergency Preparedness				
02	Construction	14	Review, Assessment & Oversight				
03	Management Systems	15	Nuclear Criticality Safety				
04	Training & Qualification	16	Testing				
05*	Procedures (*moved to FA22)	17** (deleted)	Occurrence Reporting (**moved to FA03)				
06	Safety Documentation	18	Safeguards & Security				
07	Environmental Protection & Waste Mgmt.	19	Packaging & Transportation				
08	Quality Assurance	20	Occupational Safety & Health				
09	Configuration Management	21	Procurement				
10	Maintenance	22	Conduct of Operations				
11	Radiation Protection	23	Project Management				
12	Fire Protection	24	Waste Management				

Performance Analysis (per Procedure Manual 12Q, PA-1) is a process, conducted periodically, for identifying recurring problems and prioritizing improvement opportunities from the analysis of feedback information from all sources. Line Facility Managers are required to conduct Performance Analyses of their operations semi-annually. Performance Analysis at the company level is performed quarterly of both event-based and review-based data for a 12-month period. The Performance Analysis Advisory Group (PAAG), sponsored by this Contractor's Management Council, manages the quarterly site-level Performance Analysis process. The Disciplined Operations Summary Indicator (DOSI) in the Quarterly Site-level Performance Analyses Reports analyzes this Contractor ORPS event data and serves as a site high-level indicator for Disciplined Operations performance. The DOSI utilizes statistical control bands and includes an Alert feature to serve as a leading indicator of declining Disciplined Operations performance.

Facility Evaluation Boards conduct independent assessments of this Contractor facility operations/activities, support organizations, projects, self-assessment programs, and site functional programs. The results of each evaluation are reported directly to this Contractor's President. The independent assessment program provides this Contractor facility and senior management with performance-based information to support continuous improvement, to direct leadership resources, adjust personnel and financial resources, and identify areas of excellence.

The program also satisfies contractual and regulatory obligations for company-level independent oversight.

In addition to Facility Evaluation Board (FEB) assessments, self-assessments and analysis of performance per Procedure Manual 12Q, feedback information is also generated by the following program areas:

Price-Anderson Amendments Act (PAAA) Non-Compliance Tracking System (NTS) reportable non-compliances, per Procedure Manual 8B, CAP-11;

Problems, documented and processed per MRP 4.23, Site Tracking, Analysis, and Reporting (STAR) database;

Stop Work Orders (SWOs), per Procedure Manual 1Q, QAP 1-2;

Occurrence Reporting, per Procedure Manual 9B, Procedure 1-0;

Lessons Learned Program, per Procedure Manual 1B, MRP 4.14;

Employee Concerns Program per Procedure Manual 1B, MRP 1.06;

Maintenance History and Trending per Procedure Manual 17, 16.01;

Unreviewed Safety Questions (USQ) Program, including Potential Inadequacies in the Safety Analysis (PISA) per Procedure Manual 11Q, 1.05; and

Security Self-Assessments, per Procedure Manual 7Q (based on DOE O 470.1), are conducted to review specific areas of the Safeguards and Security Program.

Feedback information is screened by the Regulatory Compliance Committee for potential significant Price-Anderson Amendments Act (PAAA) non-compliances in accordance with the *Compliance Assurance Manual* (Procedure Manual 8B) and combines with the Performance Analysis process (Procedure Manual 12Q) to ensure self-reporting and prevent recurrence of non-compliances. Additionally, DOE-HQ and DOE-Site conduct periodic general and focused external independent assessments of ES&H and Safeguards & Security programs and activities.

Problems identified by the feedback sources listed above are processed through the *Corrective Action Program (CAP)*, MP 5.35, with corrective actions tracked using the STAR database described below. The process is implemented in a tailored manner, with problems assigned to one of four levels of significance, and includes the following elements: problem identification (including Extent of Problem determination), significance determination and problem analysis (including Extent of Condition determination); lessons learned evaluation; corrective action development, implementation and closure; and, effectiveness determinations of completed corrective actions. Post-closure Effectiveness Reviews of completed Significance Category (SC) 1 and 2 corrective actions (optional for SC 3; not required for SC 4) are conducted within 180 days to ensure that the potential for recurrence is minimized. The *Problem Analysis Manual*,

this Contractor-SCD-9 contains the Causal Analysis Tree used for assigning causes to identified problems and guidance for determining the type of causal analysis appropriate for the significance level of the problem. An electronic database process, *Site Tracking, Analysis, and Reporting (STAR)* per Procedure Manual 1B, MRP 4.23, defines the process for documenting and managing the resolution of identified problems to meet the requirements of the Corrective Action Program defined in Management Policy MP 5.35. The STAR process is similarly used for other facility/organization/project commitments and actions (i.e., non-problems) not associated with MP 5.35. The STAR database is an electronic format where problems are entered, analyzed, and associated actions tracked to closure.

In addition to the feedback and improvement mechanisms described above, there is an additional need to review, from a high-level perspective, the effectiveness of the entire this Contractor Integrated Safety Management System as a system. To satisfy that need, an Annual ISMS Review is conducted to verify the continuing effectiveness of this Contractor's ISMS. By analyzing and reviewing the aggregate of collected feedback data and trends, the Annual ISMS Review identifies major adjustments that need to be part of an ISMS improvement strategy directed by this Contractor's senior management. Results of the Annual ISMS Review and selected Key Performance Indicators described below are used to provide input to this Contractor's Annual ISMS Declaration letter which this Contractor submits to the DOE Site to support the Annual DOE-Site ISMS Declaration (including all contractors, SREL and the Forestry Service) that is submitted to DOE-HQ. The ISMS Declaration is a statement, with supporting justification, that the organization's top management official has determined that the organization's ISM System is fully implemented, maintained and functioning in an effective manner.

The ISM DEAR Clause, 48 CFR 970.5223-1 (e), requires this Contractor, "...to annually review and update, for DOE approval, our safety performance objectives, performance measures, and commitments consistent with and in response to DOE's program and budget execution guidance and direction. The DOE ISM Guide, DOE G 450.4-1B, Chapter IV, outlines the various components of the "annual review." The "annual review" does not occur as a single discrete activity, but rather a number of individual actions that occur annually but at different times during the year, and for a number of purposes. Much of what is reviewed annually involves safety goals and the program and budget activities described below, which are designed to prioritize what work is funded according to importance to safety and reduction of risk. Other annual review activities include the annual review/update of this ISMS Description and the Annual ISM Review (previously ISM Management Evaluation) for the prior calendar year. The S/RID is updated continually, as the Manager of this DOE Site, issues new or revised source requirements documents to this Contractor for implementation. The S/RID revision and review process is described in Procedure Manual 8B.

This Contractor uses a Key Performance Indicators (KPIs) system (described in *Site Performance Metric Manual*, this Contractor-RP-2002-00252, latest revision) that measures performance across the company in the following Focus Areas: Safety and Security; Technical Capability and Performance; Community, State and Regulatory Relationships; Cost Effectiveness; and Contract Performance. Under the Safety and Security Focus Area the specific performance measures are:

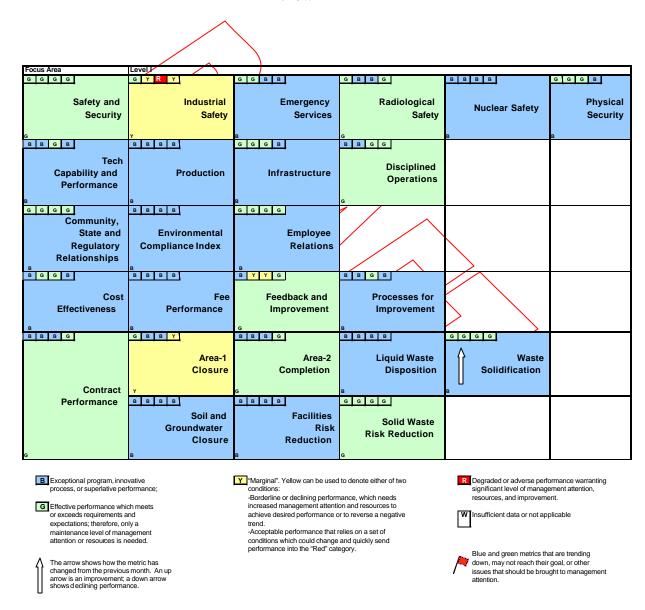
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- 1) Industrial Safety and Health;
- 2) Emergency Services;
- 3) Radiological Safety;
- 4) Nuclear Safety; and
- 5) Physical Security.

The format for the KPIs is an amunciator-type system of Key Performance Indicators (KPIs) with a color rollup scheme, established by the commercial nuclear industry. It provides a quick status overall summary of key operational, safety, and business performance. An example of the Overall Summary is shown in Figure 8 below. The underlying principle behind each metric is the use of objectivity to assess performance. This system provides not only key information at a glance but also provides this Contractor and the DOE Site Program and Project Managers the ability to "drill down" through the Focus Area Level 1 metrics to help identify the sources and effects of issues and actions. Instead of focusing only on individual events, it provides a view of emerging trends over the past twelve months.

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Figure 8. Example Site Performance Indicators Annunciator Panel—Overall Summary



Adequate resources to maintain and improve this Contractor's ISMS are identified and allocated as part of the annual program and budget execution process. Much of the work under the Contract involves D&D and cleanup projects designed to reduce the legacy risks to workers, the public, and the environment posed by the former production facilities. From an overall safety perspective it is therefore appropriate to monitor the progress of those projects. In addition to the Key Performance Indicators, this Contractor's Earned Value Management System (EVMS) is another way that both this Contractor and DOE Program and Project Managers can monitor technical progress as well as cost and schedule of all this Contractor work managed as a project. In addition, this Contractor reviews and updates its safety goals for the coming calendar year, and this Contractor's President submits those to the DOE Site Office. Status relative to these goals is reported quarterly. For this calendar year, the specific safety goals were in the following

areas: 1) Total Recordable Case (TRC) Rate Improvement, 2) Days Away Restricted or Transferred (DART) Rate Improvement, 3) Transportation Events, 4) Personnel Contaminations, and 5) Employee Radiation Dose.

8.3 Role of Company-Level Mechanisms in Implementing ISMS Guiding Principles

There are seven ISMS Guiding Principles | Guiding Principles 1, 2, and 3 apply to the implementation of all five of the ISMS Core Functions, whereas the remaining four Guiding Principles apply to specific Core Functions.

1) <u>Line Management Responsibility for Safety</u>: Line management is responsible for the protection of the public, the workers, and the environment.

This Principle is primarily implemented by the requirements of MP1.22, Integrated Safety Management System and other sections of this Contractor's management policies and charters and Procedure Manual 1B, this Contractor Management Requirements and Procedures. In addition, specific procedures define line management actions and approval authorities that represent, for the subject matter covered by the procedure, managerial responsibility for safety.

2) <u>Clear Roles And Responsibilities</u>: Clear and unambiguous lines of authority and responsibility for ensuring safety are established and maintained at all organizational levels within the Company and its subcontractors.

This Principle is implemented by MP 1.22, and other sections of this Contractor-1-01; Procedure Manual 1B, *This Contractor Management Requirements and Procedures*; and Procedure Manual 1Q, *Quality Assurance Manual*. Each procedure in the Integrated Procedures Management System contains a section that defines roles and responsibilities for the conduct of that procedure. Procedure Manual 1B, MRP 1.24, *Development, Review and Approval of Memoranda of Understanding/Memoranda of Agreement* is this Contractor's mechanism that is used when necessary to document agreements concerning division of programmatic responsibilities among this Contractor's organizations or functions.

Responsibilities of this Contractor's subcontractors are clarified by subcontract language, as appropriate. Where safety and other responsibilities between two DOE contractors need to be made clear, this DOE Site uses Memoranda of Understanding (MOU). One example of that is the MOU between this DOE Site, this Contractor, and another contractor regarding Security and Support Services responsibilities.

3) <u>Competence Commensurate with Responsibilities</u>: *Personnel possess the experience, knowledge, skills, and abilities that are necessary to discharge their responsibilities.*

This Principle is primarily implemented through the requirements of Procedure Manual 4B, *Training and Program Qualification Manual*, Procedure Manual 5B, *HR Polices*, *Practices, and Procedures*, and Procedure Manual 1Q, *Quality Assurance Manual*.

4) <u>Balanced Priorities</u>: Resources are effectively allocated to address safety, programmatic, and operational considerations. Protecting the public, the workers, and the environment is a priority whenever activities are planned and performed.

This Principle, primarily implemented at the company level by the requirements of Procedure Manual 6B, *Program Management Manual*, most closely aligns with the first ISMS Core Function, Define Scope of Work.

5) Identification Of Safety Standards And Requirements. Before work is performed, the associated hazards are evaluated and an agreed-upon set of safety standards and requirements are established which, if properly implemented, provide adequate assurance that the public, the workers, and the environment are protected from adverse consequences.

This Principle is primarily accomplished by selecting, based on the hazards analyses, the appropriate safety standards and requirements from the S/RID, developed according to Procedure Manual 8B. *Compliance Assurance Manual*. This Principle most closely aligns with the third ISMS Core Function, Develop/Implement Controls.

6) <u>Hazard Controls Tailored to Work Being Performed</u>: Administrative and engineering controls to prevent and mitigate hazards are tailored to the work being performed and the associated hazards.

This Principle, supported by identification of safety standards (Principle 5 above) and the results of the Core Function 2 Hazards Analysis, is primarily accomplished by selecting the appropriate hazard controls that are incorporated into the design and operation of facilities and activities. *This Principle* most closely aligns with the third ISMS Core Function, Develop/Implement Controls.

7) <u>Operations Authorization</u>: The conditions and requirements to be satisfied for operations to be initiated and conducted are clearly established and agreed-upon.

At the operating facility level, this Principle is primarily ensured by compliance with the requirements in Procedure Manual 11Q, *This Contractor Facility Safety Document Manual*, Procedure 1.08, *Authorization Agreements*; and Procedure Manual 12Q, *Assessment Manual*, Section 2, *Startup and Operational Readiness Assessments*. Authorization for work in the field to commence is integrated into the Hazard Analysis Process specified in Procedure Manual 8Q, 120. Before maintenance work (Procedure Manual 1Y) may commence in an operating facility, the Shift Manager must release the facility/equipment by approving the Safe Work Permit (SWP). Similarly, Procedure Manual 8Q, 120 assigns authority, via an approved SWP, to commence work `controlled by the D3 Manual for Utilities Operations and project, task-level, and other non-facility and stand-alone work. Work Control for Site D&D project work (performed according to Procedure Manual 1C) is similarly addressed by a sub-tier procedure, C2, 2.05. Additionally, pre-job briefings are required to be conducted with work participants before work may commence. This Guiding Principle most closely aligns with the fourth ISMS Core Function, Confirm Readiness and Perform Work Safely.

8.4 Protection of the Workers, the Public, and the Environment

Operations on this Site are conducted in a manner that protects workers, the public, and the environment. To establish a consistent approach by the entire Site community, a *Site Workplace Safety, Health and Security Policy* was signed jointly by the top on-site officials of the following Site organizations:

Site Office, Department of Energy;

Site Office, National Nuclear Security Administration (NNSA);

This Contractor;

Contractor providing safeguards and security services;

Site Environmental Laboratory, and

U.S. Forest Service.

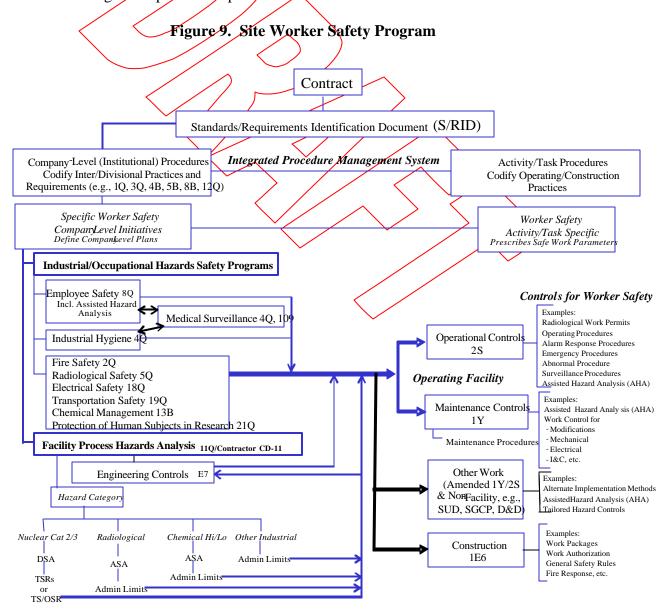
Because of the potentially far-reaching effects associated with the materials located at this Site, many of the mechanisms employed by this Contractor's safety programs are directed toward protection of the public and the environment as well as the workers. Safeguards & Security support a broad safety role since many of the S&S requirements are focused on protecting safeguards and security interests from theft, diversion, industrial sabotage, radiological sabotage, toxicological sabotage, espionage, unauthorized access, loss, and compromise. Those and other hostile acts are treated by the ISMS similarly as hazards because they can cause unacceptable adverse impacts on national security, program continuity, and the health and safety of employees, the public and the environment. This section details how this Contractor's ISMS Mechanisms are specifically focused to protect the workers, the public and the environment.

Protection of the Workers

The worker safety-related programs used by this Contractor, through the company level policies and procedures, ensure safety is integrated into all aspects of the work. The hierarchy of this Contractor's integrated worker protection program is depicted in **Figure 9**.

Various company-level procedures and manuals shown in **Figure 9** specify practices and requirements for worker safety. The worker safety elements include, but are not limited to: Procedure Manuals 8Q (*Employee Safety Manual*), 4Q (*Industrial Hygiene Manual*), 1Y (*Conduct of Maintenance*), 2S (*Conduct of Operation*), 5Q (*Radiological Control*), 2Q (*Fire Protection*), 18Q (*Electrical Safety*), 19Q (*Transportation Safety*), 13B, (*Chemical Management Manual*), this Contractor-SCD-3 (*Nuclear Criticality Safety Program*), and this Contractor SCD-6, *Site ALARA Manual*. Requirements related to worker protection from process hazards are addressed in Procedure Manual 11Q (*Facility Safety Documentation Manual*). Additional worker safety elements specific to construction work are addressed in Procedure Manual 1E6 (*Construction Management Department Manual*). Procedure Manuals 2S and 1Y contain provisions for alternate implementation methods for selected portions of those Manuals for site utilities operations, facility decontamination and decommissioning, soil and groundwater closure projects, and other non-operating facility situations where certain features of 2S and 1Y are not appropriate. Those special provisions are approved and inserted into the respective Procedure Manual 2S or 1Y. The special provisions must meet S/RID requirements and be consistent with

all company-level programs. At the activity level, implementation of the worker protection program is tailored to the activity/work according to Manual 8Q, Procedure 120, *Hazard Analysis*. That procedure invokes use of an Assisted Hazards Analysis (AHA) process to ensure the work is planned and conducted in a manner that meets S/RID requirements and is integrated with other company-level programs. The above policies and procedures address the requirements in the Rule. In addition to worker safety, many of the programs listed here also have features designed to protect the public and the environment.



The Medical Surveillance Program, implemented by the Industrial Hygiene Procedure Manual 4Q, Procedure 109, is designed to identify and track physiological changes of workers exposed to occupational hazards. In that procedure, the roles and responsibilities are integrated among line management (having primary responsibility), the Field Industrial Hygiene staff, the Safety and Health Programs staff, the Medical Department, and the employees whose health must be

protected. Supervision is responsible to place personnel under their control into medical surveillance based on the Field Industrial Hygiene staff's determination of potential for employee exposure to chemical, physical, biological, or ergonomic hazards. The determination of hazardspecific medical surveillance for work groups is based on hazard assessments and exposure monitoring conducted at the worksite. The Medical Department is responsible for performing the appropriate medical surveillance of those personnel identified by supervision, and is responsible to inform supervision of all findings, and to inform Field Industrial Hygiene and Safety and Health Programs of any anomalies. Employees are required to report to the Medical Department, as directed, for medical surveillance as well as to conduct their work according to established procedures, to seek medical attention when necessary, and promptly to report all work-related injuries/illnesses and near misses. Field Industrial Hygiene staff and supervision work together to incorporate control measures for reducing exposures and otherwise improving working conditions. Other medical program considerations, including recordkeeping and methods for validating, communicating, and using hazards and medical data for medical evaluations and worker exposure histories are integrated throughout Procedure Manual 40 Medical Department internal procedures, and several other manuals, most notably Human Resources (Procedure Manual 5B) and Employee Safety (Procedure Manual 8Q).

This Contractor's ISMS is enhanced and supported by participation in the Voluntary Protection Program (VPP), a program that recognizes contractors that have excellent safety and health programs. This Contractor was awarded "STAR Status" the highest VPP recognition category in November 2000. In November, 2003, a DOE-HQ-led team conducted a re-certification evaluation and this Contractor's STAR Status was recertified in February 2004. By design, VPP programs encourage individual responsibility, motivate employees to improve safety and health, and increase worker protection and morale. The five Key Areas of VPP are:

- 1) Management Leadership;
- 2) Employee Involvement;
- 3) Work-site Analysis;
- 4) Hazard Prevention and Control; and
- 5) Safety and Health Training.

The key areas of VPP are embedded in this Contractor's Integrated Procedures Management System (IPMS), most notably in the Procedure Manual 8Q. In terms of ISMS, the VPP "STAR Status" assessment resides in the fifth Function - Feedback/Improvement. This Contractor has structured its Occupational Safety and Health Assessment Performance Objectives and Criteria in this Contractor SCD-4 along the lines of the five VPP Elements. Therefore, conformance with the desired VPP Elements is evaluated when organizations conduct Self Assessments and the Facility Evaluation Boards conduct independent oversight according to Procedure Manual 12Q, Assessments. This feature will enhance and continuously improve this Contractor's conformance to those VPP Elements on an ongoing basis.

Much of this Contractor's Work Control System (Procedure Manual 1Y, Procedure 8.20) was developed using the elements of an Enhanced Work Planning (EWP) process, a DOE initiative that later became the process for augmenting and implementing ISM at the task/activity level. Although EWP is no longer considered a separate program from ISM, the EWP key elements are

characteristics of the Work Control System (Procedure Manual 1Y) and the Assisted Hazard Analysis (AHA) Process (Procedure Manual 8Q, Procedure 120) that is used for maintenance and non-maintenance work.

The following table illustrates the relationship among the elements of EWP and VPP and ISMS Functions and Principles, and it identifies this Contractor's mechanisms that implement those elements.

EWP ELEMENT	ISMS FUNCTION, PRINCIPLE, or GUIDANCE	T This Contractor MECHANISM (also see Fig. 6)	VPP ELEMENT
Line Management Ownership	Line Management Responsibility for Safety (Principle # 1)	this Contractor-1-01 selected Policies & Charters; Procedure Manual 1B & procedure manuals	Management Leadership
Worker Involvement	"Managers and workers at all organizational levels should be involved in developing, maintaining, and improving the controls that must be applied" (DOE G 450.4-1B, Sect. 1.1)	Site Workplace Safety & Health Policy, Procedure Manual 80, Assisted Hazard Analysis, Behavior-Based Safety	Employee Involvement
	Analyze Hazards (Function # 2)	Procedure Manuals 11Q, 8Q-120 et. al.	Work Site Analysis
	Develop/Implement Controls (Function # 3)	Procedure Manual 8B, et. al	Hazard Prevention and Control
	Competence per Responsibilities (Principle # 3)	Procedure Manuals 4B, 5B, 1Q	Safety and Health Training
Graded Approach	Tailored Hazard Control (Principle # 6) (Tailoring Guide)	Procedure Manuals 8B, 11Q, E7, et.al.	
Organizationally Diverse Teams	"The Safety Management System should integrate among the different organizational elements." (DOE G 450.4-1)	Procedure Manuals 8Q and 1B, MRP 3.26, et.al, Fifth Imperative: "Teamwork" & Committees/Councils	
Organized Communication	Feedback/Improvement (Function 5)	Procedure Manual 12Q	

The Employee Involvement element is also enhanced via Behavior-Based Safety (BBS) initiatives. To augment and support the effectiveness of this Contractor's traditional safety programs, the concepts of Behavior-Based Safety (BBS) are valued and endorsed by this Contractor's senior management. Whereas traditional safety programs primarily focus on identifying and eliminating unsafe conditions and practices, the behavior-based safety process is focused on identifying and eliminating "at risk" behaviors of people that statistically account for 96% of all workplace accidents. The foundation of this process is to involve individual workers directly in eliminating their own at-risk behaviors through the use of positive reinforcement

techniques. Implementation of the BBS Program is coordinated by the Site Behavior-Based Safety Steering Committee, as described in Procedure Manual 8Q, Procedure 2. BBS Local Safety Improvement Teams work with their respective organization Safety Committees to address BBS implementation issues and specific safety matters at the organization or facility levels. A BBS database, accessible from the site e-mail system, is used by individual BBS Observers to log BBS Observations. The accumulated data is available for analysis and trending to identify behaviors that need to be addressed site-wide to improve site safety performance.

Although primarily targeted at improving employee safety, BBS techniques are also supportive of initiatives to continuously improve Conduct of Operations performance. Conduct of Operations performance impacts worker safety as well as protection of the public and the environment. One example of an initiative that is targeted directly at Conduct of Operations performance improvements is First Line Manager Leadership Development Training that introduces First Line Managers to a broad spectrum of leadership concepts and practices designed to improve the effectiveness of supervisory oversight.

This Contractor implements a Near Miss Program (Procedure Manual 8Q, Procedure 18), in which near miss incidents and minor injuries are reported and analyzed for corrective actions that may prevent the recurrence of similar incidents having potentially more severe consequences.

Protection of the Public

This Contractor has programs designed to protect the public from process accidents or other events occurring at the site. Procedure Manuals 11Q (Facility Safety Documentation Manual) and 6Q (Emergency Management Program Procedure Manual), serve as focal points to integrate a number of additional ISMS mechanisms to help prevent and/or mitigate the hazards to the public associated with all site facilities and activities. A system of safety documentation is required by Procedure Manual 11Q to identify all process-related hazards and analyze the adequacy of the identified controls or defenses. Conduct of Engineering and Technical Support Manual (Procedure Manual E7), Conduct of Operations Manual (Procedure Manual 2S), and Conduct of Maintenance Manual (Procedure Manual 1Y) provide guidance for implementing those identified controls and defenses. Procedure Manual 8Q, 120 Hazard Analysis prescribes the Assisted Hazard Analysis (AHA) Process for identifying and controlling hazards, as well as authorizing work for maintenance work in operating facilities. The AHA Process is also used for other types of task-level work not specific to operating facilities (e.g., Decontamination and Decommissioning, Soil and Groundwater Closure Projects, Utilities, and other non-facility and stand-alone work not controlled by Procedure Manual 1Y, Procedure 8.20).

The Site Emergency Management Program Procedures Manual (Procedure Manual 6Q), along with the Site Emergency Plan (this Contractor-SCD-7), coordinate the emergency management aspects of the Fire Protection, Radiological Control, Environmental Management, Safeguards, Security, and Transportation Safety Programs among others, as well as providing the required coordination with offsite emergency planning and response authorities. Specific requirements that assure protection of the public from incidents involving hazardous and radioactive materials transported on Site or shipped from Site are addressed in this Contractor's Transportation Safety Manual (Procedure Manual 19Q).

Protection of the Environment

The Environmental Compliance Manual (Procedure Manual 3Q) contains the mechanisms for maintaining all of this Contractor's facilities and activities in compliance with all applicable federal, state, DOE, and local environmental requirements, and contains this Contractor's Programs for Pollution Prevention and Waste Minimization. This Contractor's Environmental Management System, fully integrated into this Contractor's ISMS, complies with DOE O 450.1, Environmental Protection Program. Additionally, a Site Environmental Management System Policy was approved by the Senior Managers of this DOE Site Office, this NNSA Site Office, this Contractor, the contractor responsible for site safeguards and security, the Site Environmental Laboratory, and the U.S. Forest Service All Site organizations participate in a site-wide environmental program described in the Site Environmental Management System Description Manual, G-TM-G-00001, Rev. 3. As described above for worker and public safety, the engineering, operational, and maintenance controls provided by the Conduct of Engineering and Technical Support Manual (EX), Conduct of Project Management and Control Manual (E11), Conduct of Operations Manual (2S), Conduct of Maintenance Manual (1Y), Facility Disposition Manual (1C) are the primary mechanisms that ensure the Site missions are achieved while protecting the environment. An example of this Contractor's commitment to Pollution Prevention and Waste Minimization is Procedure Manual E7, Procedure 1.41 *Pollution* Prevention in Design. That procedure provides the process, responsibilities and requirements for inclusion of Pollution Prevention into the design phases of new facilities and modifications to existing facilities. Properly applied, any additional cost incurred in design/construction to achieve Pollution Prevention and Waste Minimization objectives will be offset over the life of the facility by minimizing future waste management and environmental remediation cost.

9 ISMS DESCRIPTION CHANGE CONTROL PROCESS

The change control process for this descriptive section of the S/RID is the same as for any other portion of this S/RID, as described in S/RID Functional Area 00.

10 GLOSSARY

<u>AA</u> - Authorization Agreement: A documented agreement between DOE and this Contractor that contains the terms and conditions that DOE relies on to determine that a nuclear facility can be operated safely and in compliance with all applicable laws and regulations relating to worker and public safety and protection of the environment.

<u>AB</u> – Authorization Basis Documents: The set of Safety Basis documents that must be approved by DOE.

AHA – Assisted Hazards Analysis

<u>ALARA</u> – As Low as Reasonably Achievable

<u>CHAP</u> – Consolidated Hazard Analysis Process

<u>CMC</u> – Chemical Management Center (formerly the Chemical Commodity Management Center)

<u>CPB</u> – Contract Performance Baseline (similar to the former AOP but for multiple years)

DCOP – Disciplined Conduct of Projects

DNFSB – Defense Nuclear Facilities Safety Board

DOE-EM – DOE Office of Environmental Management

<u>DOE-NNSA</u> – The part of DOE activities at this Site with National Nuclear Security Administration Programs

DOE Site Office – The part of Department of Energy Site Office not associated with NNSA

<u>DOE Site</u> – A term used to include all DQE and NNSA Site Operations

Clean-Up Incentives - Incentives similar to PBI's, except for clean up work only

ESH&QA - Environment, Safety, Health & Quality Assurance

<u>FEB</u> - Facility Evaluation Board, this Contractor's independent assessment organization

FOSC – Facility Operations Safety Committee

<u>Hazard Analysis</u> – A term used broadly in ISM to discuss all aspects of hazards identification and analysis, safety and accident analyses and associated documentation

IPMS – Integrated Procedure Management System

KPI – Key Performance Indicator

MCS – Management Control System

<u>PBIs</u> – Performance Based Incentives (similar to former Annual Operating Plan (AOP) except for multiple years – used for NNSA work under a Contract)

QAMP – Quality Assurance Management Plan

<u>SB</u> – Safety Basis: The documented safety analysis and hazard controls that provide reasonable assurance that a DOE nuclear facility can be operated safely in a manner that adequately protects workers, the public, and the environment. (See AB above)

SGCP – Soil and Groundwater Closure Projects (formerly Environmental Restoration)

Intranet – Site Information Network Environment – the Site intranet

SPPC – Site Policies and Procedures Committee

S/RID – Standards/Requirements Identification Document

SSSP – Site Safeguards and Security Plan

STAR - Site Tracking, Analysis, and Reporting database

SUD – Site Utilities Department

SWP – Safe Work Permit

<u>WA/EP</u> – Work Authorization/Execution Plan under a Contract (formerly Work Authorization and Performance Baseline (WAPB) and prior to that, Annual Operating Plan (AOP))

11 BIBLIOGRAPHY: DOCUMENTS CONTAINING THIS CONTRACTOR'S ISMSMECHANISMS

11.1 This Contractor's Management Policies (MPs) and Charters

11.1.1.1 MP 1.2 Management Policies, Requirements, and Procedure System

This Contractor shall establish and maintain a controlled system of written management directions in the form of policies, requirements and procedures. These management directions shall govern the activities of this Contractor employees performing work under the prime contract with the Department of Energy (DOE) as well as those of its subcontractors.

Unless otherwise stipulated, the provisions of these policies, requirements, and procedures apply to this Contractor and other members of the Performing Entity (as listed in the Contract) for management and operations at this Site and to subcontractors performing work for any member of the Performing Entity when required by Contract or applicable law.

Written management directions provide this Contractor and subcontractor employees with clear documented guidelines consisting of policies, work procedures, performance requirements, process or equipment operational limits, and rules of conduct. This policy gives Functional Managers approval authority for company-level policies, procedures and processes. Line management is responsible for determining the need and initiating the preparation of operating procedures.

11.1.1.1.2 MP **1.11** Open Communication

This Contractor recognizes that free and open expression of employee workplace issues and concerns is a fundamental characteristic essential to the safe, efficient and effective operation of this Site. In order to safeguard employee and public health and safety, ensure compliance with applicable laws and regulations, and support this Contractor's mission to operate this Site in a safe, efficient and cost effective manner, this Contractor promotes and encourages open and

honest communication of issues and concerns that have the potential to adversely affect the Site or its employees. It is the policy of this Contractor that employees be allowed to identify and seek resolution of their workplace issues and concerns in a reprisal free environment, with the expectation that they will be fully addressed. The Employee Concerns Program (ECP) provides an independent and impartial avenue for this Contractor and this Contractor's subcontractor employees to seek assistance in addressing concerns related to environmental, safety, health, quality, safeguards & security, waste/fraud/abuse, mismanagement, reprisal and other matters, where management systems or existing programs have failed to adequately address the issue, the employee genuinely fears retaliation should existing avenues be sought, or the employee requires anonymity.

11.1.1.1.3 MP 1.18 Employee Training

This Contractor shall provide training that supports employee performance of work assignments, and that contributes to the safety and formality of operations. All of this Contractor's training activities shall be compliant with applicable DOE Orders, Federal and State laws/regulations, and this Contractor's training requirements, procedures, and policies. A graded approach to all training activities shall be utilized to ensure training is developed, implemented, and evaluated in a cost effective, efficient manner. The Training Managers Committee shall advise management on site training needs, program goals, and priorities

11.1.1.1.4 MP 1.22 Integrated Safety Management System

This Contractor operates within a framework aligned with the principles and functions of Integrated Safety Management. The objective of ISM is to systematically integrate safety into management and work practices at all levels so that missions are accomplished while protecting the public, the worker, and the environment. This is accomplished through effective integration of safety management into all facets of work planning and execution. Stated more simply, the objective of the Integrated Safety Management System (ISMS) is to "Do Work Safely". This Contractor's ISMS is the overall management system for conducting work under this Contract, (hereafter referred to as the Contract) including subcontracted work. This Contractor's ISMS satisfies all requirements of the DOE Policy 450.4, *Safety Management System Policy*, and DOE Acquisition Regulations (DEAR) clauses 970.5223-1, *Integration of Environment, Safety, and Health into Work Planning and Execution*, 970.5204-2, *Laws, Regulations, and DOE Directives* and *10 CFR 851 Worker Safety and Health Program*. The DEAR clauses appear in the Contract, whereas DOE P 450.4 and 10 CFR 851 appear in the *Standards/Requirements Identification Document* (S/RID – this Contractor-RP-94-1268). This Contractor's S/RID satisfies the requirements of DEAR 970.5204-2.

For the purpose of this policy, the term safety encompasses protection of the public, workers, and the environment, including safeguards and security, pollution prevention, and waste minimization. Since safeguards and security requirements are integrated into this Contractor's ISMS, the ISMS also satisfies the basic requirements of DOE P 470.1, *Integrated Safeguards and Security Management System (ISSM) Policy*. Additionally, the terms employees and workers include subcontractor employees.

The provisions of this procedure apply to members of the Performing Entity for management and operations at this Site, and to subcontractors performing work for any member of the Performing Entity when required by subcontract or applicable law.

This policy also establishes a mechanism for this Contractor to meet the applicable requirements in support of this Contractor's contractual obligations. For a current list of Source Document references, go to the Standards/Requirements Identification Document (S/RID) webpage accessible through the Site intranet.

11.1.1.1.5 MP 2.19 Workplace Violence Policy

This policy sets forth this Contractor's position that violence, threats of violence and intimidation, or coercion in the workplace will not be tolerated. This Contractor's goal is to provide a safe work environment that is free from violent behavior and threats of physical violence. Any occurrence of violent behavior or threat of physical violence is unacceptable conduct and is strictly prohibited. To assure a workplace free of violence or threats of violence, this policy is to be implemented at all work locations. This policy applies to all employees and/or applicants of this Contractor and its partners. Additionally, this policy establishes responsibilities for appropriately responding to incidents of workplace violence.

11.1.1.1.6 MP 3.3 Procurement and Materials Management

This Contractor shall develop, implement and maintain a fully documented Procurement and Materials Management System, including Subcontract Management and Field Procurement Engineering, in accordance with the Contract. This system shall provide for purchasing and asset management operations that will be conducted consistent with the highest standards of good business ethics and conduct, and in accordance with approved policies and procedures. Materials Management operations shall be conducted in accordance with applicable laws, regulations, and directives.

11.1.1.1.7 MP **3.6** Transportation

This Contractor shall ensure all transportation functions are conducted in the safest and most cost effective manner. this Contractor Transportation Program including: shipping and trucking operations, transportation support services, hazardous materials services, traffic services, mail services, driver safety compliance, centralized trucking and railroad operations, will comply with applicable U.S. Department of Transportation regulations and U.S. Department of Energy orders and directives. Overall guidance for implementing and maintaining the Transportation Program is provided in appropriate manuals and procedural documents.

11.1.1.1.8 MP 3.32 This Contractor Earned Value Management System (EVMS)

This Contractor will apply EVMS – an integrated management control system – to all work at Site that is managed as a project. Use of EVMS will allow both the DOE and this Contractor's Program and Project Managers to have visibility into cost, schedule, and scope/technical progress on their contracts for the purpose of performance measurement and management. The Facility Evaluation Board Project Review Team (FEB-PRT) will assess project compliance with established procedures (including ISMS implementing procedures).

11.1.1.1.9 MP 4.1 Environmental Assurance

This Contractor shall:

- Operate and maintain company-managed facilities in compliance with applicable laws, regulations and Department of Energy (DOE) directives for the protection of the environment, and the safety and health of personnel.
- Design, construct and operate new facilities in a manner that ensures that exposure of individuals and population groups to radioactive and other hazardous materials is as low as reasonably achievable (ALARA).
- Reduce to the maximum extent practicable the purchase and use of hazardous materials.

 Where such use is necessary; store, use, recycle, treat, and dispose of these materials in a manner that ensures appropriate protection for the environment and human health.
- Manage all facilities and activities in a cost-effective and environmentally responsible manner, minimizing the generation of all types of waste (non-hazardous, hazardous, radioactive, and mixed) and continually striving to reduce the load on waste treatment, storage, or disposal facilities by reducing the quantity or toxicity of waste.
- Establish a Process Ventilation Management Program to ensure that the site's process ventilation systems will perform their important role in minimizing employee exposures and unplanned environmental releases of airborne radioactive contamination and other hazardous materials.
- Establish a Refrigerant Management Program to provide site wide coordination for the reduction of chlorofluorocarbon (CFC) refrigerant usage and support required refrigerant containment practices.
- Identify and characterize all waste streams with sufficient accuracy to ensure regulatory compliance and to allow proper minimization, segregation, treatment, storage, and disposal.

11.1.1.10MP 4.2 Quality Assurance

This Contractor shall provide products and services which meet the requirements and expectations of our customers. This Contractor's Quality Assurance Program (QAP) shall be implemented in a manner supporting implementation of: safety, disciplined operations, cost effectiveness, continuous improvement, and teamwork. This policy also establishes a mechanism for this Contractor to meet the applicable requirements in support of this Contractor's contractual obligations.

11.1.1.11MP 4.3 Medical Programs

This Contractor shall implement an employee medical program in compliance with applicable Department of Energy (DOE) requirements and federal and state regulation requirements. It is the policy of this Contractor to provide a quality occupational health program that promotes the physical and mental well-being of our customers while maintaining medical information in a confidential, ethical and legal manner.

11.1.1.12MP 4.4 Radiological Protection

This Contractor shall provide for the radiological protection of this Contractor's employees, other site contractor and subcontractor personnel, visitors, and members of the general public from radiation exposure originating from operations of the Site. Radiation exposure of the work force and public shall be controlled such that radiation exposures are well below regulatory limits, that there is no radiation exposure without commensurate benefit, and that it is maintained as low as reasonably achievable (ALARA) at all times. No person shall take or cause to be taken any action inconsistent with the requirements of 10 CFR 835 or any program, plan, schedule, or other process established by 10 CFR 835. However nothing in 10 CFR 835 shall be construed as limiting actions that may be necessary to protect health and safety.

11.1.1.13MP 4.5 Nuclear and Process Safety

This Contractor shall manage this Site in a manner that ensures there is no undue risk of nuclear and process accidents that could adversely affect the health or safety of employees, visitors, members of the general public or the environment. For all activities, the continued assurance of the capability and capacity for safe operations will remain paramount to protect facilities and the environment from unacceptable risks. (See also MP 6.10; Procedure Manual 11Q; this Contractor-SCD-3)

11.1.1.14MP 4.7 Occupational Safety Policy

This Contractor shall provide a safe, clean, working environment for employees, visitors, subcontractors, and the public that facilitates effective job performance and is in compliance with all applicable regulations and the philosophy of the DOE. Higher standards of care in the practice of occupational safety and health shall be provided as needed for personnel or public protection, essential program continuity, or national security. The safety and health of employees will be of the highest priority of this Contractor. Work will stop immediately rather than continuing unsafely.

11.1.1.15MP 4.8 Control and Accountability of Nuclear Material

This Contractor shall implement and maintain a graded safeguards program to ensure that nuclear materials are protected, controlled, and accounted for; that safeguards programs are designed to meet defined threats; and that programs are effectively coordinated and integrated at all levels of operation. This policy shall implement applicable Department of Energy (DOE) orders. This Contractor shall control and account for all nuclear materials which have been entrusted to it. This accountability requirement shall be a paramount concern in all organizations that use or store nuclear materials.

11.1.1.16MP 4.9 Integrated Safeguards and Security Management

The purpose of this policy is to formalize an Integrated Safeguards and Security Management (ISSM) framework. Safeguards and Security management systems provide a formal, organized process for planning, performing, assessing, and improving the secure conduct of work in accordance with risk-based protection strategies. These systems are institutionalized through

Department of Energy (DOE) directives and contracts. The ISSM system framework encompasses all levels of activities and documentation related to Safeguards and Security management throughout the DOE complex.

Throughout this policy, the term ISSM includes all topical areas of safeguards and security (e.g., personnel, physical, information, nuclear safeguards, cyber security) and related cross-cutting areas (e.g., export control, classification, foreign visits and assignments, and foreign travel). ISSM will ensure the adequate protection of DOE assets (e.g., classified matter, unclassified sensitive matter, and U.S. Government property).

11.1.1.17MP 4.10 Computer and Technical Security

This Contractor shall operate computer and telecommunications systems in a secure environment that stresses strict adherence to communications and operations security, test procedures, and technical surveillance countermeasures (TSCM). This policy implements applicable Department of Energy (DOE) orders.

This Contractor shall protect classified and sensitive unclassified data that is processed on computers and transmitted over telecommunication systems. To meet this requirement, this Contractor shall determine and apply the most cost effective computer security measures and train computer users in the use of all available and applicable safeguards. The measures chosen shall be consistent with the available technology, processing, frequency, the classification level or sensitivity of data handled or produced, the environment in which the computer system operates, the degree of risk that can be tolerated, and other factor which may be unique to the system. Each employee and line manager shall apply this policy in the conduct of daily activities, in developing plans and procedures, and in the construction of new facilities or installation of new equipment.

11.1.1.18MP 4.11 Control of Classified and Sensitive Information

This Contractor shall protect classified and sensitive information through the use of the Information Resources Control (IRC) Program. This program shall implement applicable Department of Energy (DOE) orders.

This Contractor shall comply with DOE orders and federal laws governing the receipt, storage, use, and distribution of classified and sensitive information. Documents or other materials developed in support of classified programs shall be properly marked and protected. Line management shall ensure that this policy is considered in every aspect of their operations. Each employee shall understand and comply with his responsibilities under this policy and ensure the compliance of all other employees.

11.1.1.19MP 4.12 Emergency Preparedness

This Contractor shall provide for the continued safety of this Contractor's employees, other contractor personnel, visitors, and members of the general public during emergency conditions such as serious accidents or natural disasters. Preparations shall be made to manage emergency conditions. This shall include minimizing the risk of personnel injury and maintaining exposure

of employees, the environment, and the public to radioactive or hazardous materials to a level as low as reasonably achievable (ALARA).

11.1.1.1.20MP 4.15 Industrial Hygiene

This Contractor provides a place and condition of employment that is free from, or protected against, recognized hazards that cause or are likely to cause sickness, impaired health and well-being, or significant discomfort and inefficiency among workers. This occupational health objective is achieved through a professional, comprehensive Industrial Hygiene (IH) program based on management commitment and employee involvement, worksite analysis, hazard identification, hazard-prevention and control, and safety and health training

11.1.1.21MP 4.16 Fire Protection

This Contractor is committed to support a level of fire protection and fire suppression capability sufficient to minimize losses from fire and related hazards consistent with the best class of protected property in private industry ("highly protected risk" or "improved risk"). [1.a.] this Contractor provides a comprehensive fire protection program that achieves defense in depth for this Site. This policy establishes that this Contractor's fire protection program will address the following objectives:

Minimize the potential of occurrence of a fire or related event.

Minimize the potential for a fire that causes an unacceptable on site or off-site release of hazardous or radiological material that will threaten the health and safety of employees, the public, or the environment.

Minimize the potential for vital DOE programs suffering unacceptable interruptions as a result of fire and related hazards.

Minimize the potential for property losses from a fire and related events exceeding defined limits established by DOE.

Minimize the potential for critical process controls and safety class systems being damaged as a result of a fire and related events.

Provide an acceptable level of safety from fire and related hazards for DOE personnel, contractor personnel, and for the public to include appropriate facility and site-wide fire protection, fire alarm notification and egress features, and access to a qualified and trained fire protection staff, including fire protection engineers, technicians, and a fully staffed, trained and equipped fire department that is capable of responding in a timely and effective manner to site emergencies.

Specific support activities for organizations other than this Contractor shall be specified by memorandum of understanding. The specific requirements of this policy are met through implementation and enforcement of a comprehensive fire protection program, which is documented in Procedure Manual 2Q, Fire Protection Program Manual, other manuals in the 2Q series, and facility specific procedures. This program is based on the Site Standards/Requirements Identification Document (S/RID) which invokes applicable DOE orders, nationally recognized fire codes and standards, and accepted industry practices.

11.1.1.1.22MP 4.20 Conduct of Operations

This Contractor shall establish and maintain a "Conduct of Operations" program to enhance the safe operation of its facilities. Conduct of Operations shall, as a minimum, apply to all programs and functions of its facility operations which may have an impact on the safety of the public, environment, and this Contractor's personnel. "Conduct of Operations" is defined here as the minimum acceptable level of performance expected of operations and support personnel which may affect safety.

11.1.1.23MP 4.24 Protection of Human Subjects in Research

This Contractor shall implement a program to ensure that the rights and welfare of human research subjects are protected. All research involving human subjects conducted at this Site, or by this Contractor's employees at other locations, will be conducted in accordance with requirements for protection of human subjects found in Department of Energy (DOE) regulations and other pertinent federal, state, and local laws or regulations. For the purposes of this policy, research is defined as systematic investigation, including research development, testing, and evaluation, designed to develop or contribute to generalizable knowledge.

NOTE: this Contractor does not conduct basic human experimentation, for example, research necessary to evaluate new treatments for cancer. However, to ensure that proper protection is afforded to individuals, the DOE applies the requirements for protection of human subjects to a wide range of situations that normally might not be considered human subjects research.

11.1.1.24MP 4.25 Behavior Based Safety (BBS)

It is the policy of this Contractor to establish and sustain a Behavior Based Safety (BBS) process to reduce workplace accidents. The BBS process promotes safe operation of Site facilities through enhanced worker awareness. The BBS process supports the site's goal of world class safety performance and this Contractor's vision of an injury-free culture by promoting safe behaviors and eliminating at-risk behaviors.

11.1.1.25MP 5.5 Site and Facilities Management

This Contractor shall effectively manage all property and facility resources for which it has responsibility in accordance with corporate policies and guidelines, government regulations, DOE requirements, and this Contractor's procedures.

11.1.1.1.26MP 5.7 Configuration Management

It is this Contractor's policy that configuration management be used in development, design, construction, start-up, maintenance, operation, and dispositioning of all nuclear facilities and for other facilities that will implement configuration management to help achieve full accountability and traceability in the areas of safety, environment, and health protection.

In accordance with this policy, configuration management of facility structures, systems, components (SSC) and process computer software, ensures that technical baseline documents

completely and accurately state the SSC's functional, physical, and operational requirements; that an SSC's physical configuration satisfies the requirements stated in its technical baseline documents; and that processes are implemented to maintain compatibility between an SSC's requirements, technical baseline documents and physical configuration throughout the SSC's life cycle.

11.1.1.1.27MP 5.20 Maintenance Management

This Contractor shall implement and maintain a safe and cost effective maintenance program for all assigned DOE Site systems, structures, components and stand-alone assets.

11.1.1.1.28MP 5.24 Facility Disposition

This Contractor will conduct disposition of designated excess facilities and associated equipment in accordance with this Contractor's S/RIDS, applicable DOE Orders, and supplemental manuals as listed in the References. All related activities will be performed in a cost effective manner through systematic planning, scheduling, execution, evaluation, and documentation to ensure the health and safety of the worker, the public, and the environment. This policy is applicable to all activities for facility disposition. Disposition begins when the DOE terminates facility operations for the purpose of a defense, research, or other mission and declares the facility excess (including process equipment and all associated assets) to the department's needs.

11.1.1.1.29MP 5.27 Engineering and Construction Subcontracting

This Contractor shall support (DOE) contract reform initiatives in the areas of engineering and construction by implementing cost-effective strategies to maximize fixed-price task subcontracting. This Contractor's work control and daily planning practices will isolate tasks to the extent possible so that risks of subcontractor activities adversely impacting operations and/or operations adversely impacting subcontractor commitments and safety are minimized. Site management and overhead support shall be minimized by maximizing the freedom of the contractor to perform defined tasks within isolation boundaries established through work control and the subcontract.

11.1.1.30MP 5.35 Corrective Action Program

This Contractor establishes and implements a company-level corrective action program that serves to correct and prevent recurrence of problems affecting personnel safety, operational safety, regulatory compliance or business operations. This program is required to be utilized for the management of problems that are identified through company-level deficiency identification processes, lower-level processes that result in documenting problems, and selected external processes that may result in identification of problems. The Corrective Action Program includes the following elements:

Problem Identification (including Extent of Problem determination); Significance Determination (basis for tailored approach); Problem Analysis (including Extent of Condition determination); Lessons Learned Evaluation: G XXX-XX-XX-XX

Corrective Action Development; Implementation and Closure; and Effectiveness Reviews.

11.1.1.31Company-Level Processes

As a minimum, the following company-level deficiency identification processes are included within the scope of this policy:

Problem Identification and Resolution (PIR) Process;

Price Anderson Amendments Act (PAAA) Noncompliances;

Occurrence Reporting System (ORPS) to include Department of Energy (DOE)

Occurrences/Events Reportable & Non-Reportable Occurrences/Events within the specified Reporting Groups of the DOE Occurrence Reporting System;

Quality Assurance (QA) Stop Work Orders (SWO);

QA Audits/Surveillances;

Management Assessments (that is, Self-Assessment, Performance Analysis);

Integrated Safety Management Evaluations (that is, Facility Evaluation Board {FEB}

evaluations); and

Security Incident Inquiries.

11.1.1.32Lower-Level Processes

Lower-level Business Unit/Facility/Project processes that result in identifying and documenting problems, as defined within this policy, are included within the scope of this policy. This includes, but is not limited to, problems identified through assessments, reviews, critiques, and other similar activities. However, it is not intended that this corrective action program be used to manage results from processes such as: worker injury/illness incidents (unless ORPS reportable), Behavior Based Safety observations data, or facility self-correcting processes.

11.1.1.1.33External Processes

In addition to the above processes, results from the following DOE actions that serve as sources for the identification of problems, as defined within this policy, are included within the scope of this policy:

Type A and Type B Accident Investigations;

Operational Readiness Reviews (ORR):

Reviews and Environmental Safety & Health (ESH) Stop Work Orders issued by DOE; and Office of Independent Oversight and Performance Assurance Program Assessments.

11.1.1.34MP 5.36 Chemical Management

This Contractor shall:

Establish and maintain a chemical management policy which is in compliance with all applicable regulations and Site specific policies and procedures.

Design, construct and operate new facilities in a manner that ensures that effective exposure of individuals and population groups to hazardous chemicals is acceptably below Permissible Exposure Limits and other published Occupational Exposure Limits.

Reduce to the maximum extent practicable the purchase and use of hazardous chemicals.

Where such use is necessary; store, use, recycle, treat and dispose of these chemicals in a manner that ensures appropriate protection for the environment and human health.

Manage chemicals in all facilities and activities in a cost-effective and environmentally responsible manner while minimizing the generation of all types of waste.

Establish and maintain a chemical excess program which seeks to reuse, sell or donate chemicals as an alternative to disposal.

Establish chemical use programs which are in compliance with all applicable Occupational Safety and Health Administration (OSHA) regulations.

Establish a Hazardous Material Transportation Program to ensure proper shipment of Department of Transportation (DOT) Hazardous Chemicals across public roads. Disposition all unwanted chemicals in an environmentally responsible manner

This policy establishes the Chemical Commodity Management Center (CCMC) which is responsible for:

Establishing this Contractor's chemical management policy;

Providing guidance for the site-wide management of chemicals:

Establishing and maintaining site procedures for the Site management of chemicals;

Reviewing and approving chemical purchases while implementing controls on the purchase of Resource;

Conservation and Recovery Act (RCRA) hazardous and OSHA chemicals to control site access to these chemicals, where appropriate;

Managing this Contractor's Excess Chemical Program; and

Managing this Contractor's Hazard Communication Program.

The Chemical Management Program shall be consistent with the policy stated above and contractual provisions with Department of Energy (DOE). The formalized controls shall be based on applicable DOE directives and applicable federal, state and local regulations. The Chemical Management Program shall be kept current and shall require prompt notification and incorporation of any relevant regulatory changes.

11.1.1.135Charter 6.3 Maintenance Policy and Procedure Committee (MPPC)

The Maintenance Policy & Procedure Committee (MPPC) is responsible for providing site maintenance leadership, promoting excellence and cost effectiveness in the conduct of maintenance, resolving site-wide and programmatic maintenance issues, and sponsoring professional development of maintenance personnel. The MPPC is the site focal point for the development of site wide maintenance policy. Within its area of cognizance, this committee:

Develops policies and procedures;

Sponsors Maintenance Program Evaluations;

Sponsors sub-committees to address specific maintenance issues;

Identifies and approves programmatic improvements;

Assesses and justifies impacts of policy and procedure changes to the Site Policy and Procedure Council (SPPC);

Reviews maintenance tailored approached ideas and implementation plans;

Identifies/defines/oversees site maintenance goals, objectives, and strategic direction; and Establishes a regular and formal communication sub-committee that:

Promotes safety,

Includes interaction with other functional areas and site initiatives, Shares best practices, lessons learned and new technologies, and Receives input from and provides input to the SPPC.

11.1.1.1.36Charter 6.8 Site Fire Protection Committee (SFRC)

The Site Fire Protection Committee (SFPC) is a standing committee responsible for overview and serves in an advisory capacity for the site Fire Protection Program. The SFPC is the means for site organizations to participate in formulating resolutions to fire protection issues. The SFPC establishes minimum and sufficient, cost-effective implementation procedures for site-wide fire protection issues, and provides development and oversight of Procedure Manual 2Q, Fire Protection Program Manual.

11.1.1.37Charter 6.9 Site ALARA Committee (SAC) & ALARA/ Radiological Awareness Subcommittees (A/RAC)

The Site ALARA Committee (SAC) ensures that exposures to radiation and radioactive material are maintained at levels as low as reasonably achievable (ALARA) as defined in this Contractor's 5Q, Radiological Control. The committee reviews the overall conduct of the radiological control program to ensure continuous improvement. The ALARA/Radiological Awareness Subcommittees (A/RAC) of the Site ALARA Committee are established as a multidiscipline forum for the line and support organizations. As line organizations are ultimately responsible for ALARA activities, these subcommittees provide a direct link to the work force with respect to radiological work being planned and performed.

11.1.1.138Charter 6.10 Nuclear Criticality Safety Review Committee (NCSRC)

The Nuclear Criticality Safety Review Committee (NCSRC) implements site policy, provides for site coordination of nuclear criticality safety technical issues, procedures requirements, and practices; promotes nuclear criticality safety in the operation of facilities; and provides guidance in the area of compliance with appropriate criticality safety related Department of Energy (DOE) Orders and Standards. Business Unit/Area Criticality Safety Committees and the Nuclear Incident Monitor (NIM) Committee report to the NCSRC.

The NCSRC serves to:

Provide reviews of management policies and procedures related to nuclear criticality safety to determine the degree of uniformity of standards of implementation and operation across the site and recommend changes as necessary.

Recommend changes to management policies and initiates changes to procedures when deemed appropriate.

- Provide technical/policy consultation and advice to, and site level coordination of, the Business Unit/Area Criticality Safety Committees (CSCs), and the Nuclear Incident Monitor (NIM) Committee, and reviews technical, policy, and management issues identified by these committees at least annually.
- Investigate areas of criticality safety concern deemed significant by this committee and revalidate, as necessary, the status of criticality safety in facilities which have had to demonstrate that criticality safety controls are not needed.
- Identify issues and serve in an advisory capacity related to the training of the site's criticality safety support staff and formulate any necessary recommendations for improvement. (The staff includes those personnel who determine criticality safety limits, who ensure compliance with the limits, and who provide independent review of the products of these personnel.)
- Identify issues and serve in an advisory capacity related to the nuclear criticality safety training of site personnel.
- Develop a vision for nuclear criticality safety at this Contractor and plans to achieve that vision.
- Respond to criticality safety issues and common problems related to facility conformance to DOE Orders.

The Facility Managers Forum (FMF) is a site wide organization of managers representing field operating organizations. In the area of disciplined operations, the FMF recommends policy to senior management, integrates improvement initiatives or corrective actions, and exchanges lessons learned and best practices.

11.1.1.39Charter 6.12 Quality Assurance Policy Committee (QAPC)

This Contractor's Quality Assurance Policy Committee (QAPC) provides the leadership and strategic direction for this Contractor's Quality Assurance (QA) Program. The QAPC also serves as the forum for discussion and resolution of company-wide quality matters.

The QAPC investigates, analyzes and acts on company-wide quality issues and initiatives. The QAPC members are the single points-of-contact that represent all this Contractor's Business Units in the development of company-level QA Program management policies, documents and procedures. The QAPC provides information and direction to this Contractor's quality assurance personnel and regularly communicates with the Department of Energy Site Operation Office (DOE-SR) and National Nuclear Security Administration (NNSA) Quality organizations on various quality assurance topics.

Specifically, the QAPC:

Develops and recommends this Contractor's approval of this Contractor's Quality Assurance Policy (MP 4.2, "Quality Assurance") and this Contractor's-RP-225, "Quality Assurance Management Plan (QAMP)."

Ensures development of company-level quality assurance program documents and implementing procedures for consistent implementation by this Contractor's organizations using a graded approach.

- Identifies, defines and establishes the strategies and tactics for implementing this Contractor's Quality Assurance Program in a disciplined manner with a focus on continuous quality improvement.
- Provides leadership for the integration of QA program elements with other company-level programs such as Integrated Safety Management, Conduct of Operations, Engineering, Maintenance, etc.
- Provides liaison with other site level organizations that are responsible for the direction of other portions of the QA Safety Rule 10 CPR 830.120 Subpart A "Quality Assurance Requirements" and DOE Order 414.1B, "Quality Assurance."

Participates in assessments of this Contractor's QA Program

Reports the status of the QA Program to this Contractor's President and the Management Council.

Elevates significant company-level QA issues to Senior Management for resolution. Charters standing subcommittees to perform specific activities and address specific issues and task teams to perform specific actions.

Oversees the development of new programs and site initiatives that involve activities affecting quality.

11.1.1.1.40Charter 6.13 Regulatory Compliance Committee (RCC)

The Regulatory Compliance Committee (RCC) is a site-wide committee that provides a forum for communication and resolution of site-wide issues regarding elements of this Contractor's Integrated Safety Management System (ISMS). The RCC consists of managers and senior personnel representing operating and support organizations. The RCC develops and revises company-level compliance assurance and reporting procedures. The RCC provides information and direction to this Contractor's organizations and interfaces with the Department of Energy Site Office on various compliance and standards topics, including Price-Anderson Program matters.

11.1.1.41Charter 6.15 Solid Waste Management Committee (SWMC)

This Contractor's Solid Waste Management Committee (SWMC) develops and approves solid waste policy, and makes recommendations to the Site Policy and Procedure Council (SPPC) on other policies and initiatives which impact solid waste management. The SWMC provides a forum for communication and resolution of sitewide issues regarding elements of this Site's solid waste programs. The SWMC's area of cognizance includes sanitary, low level, mixed, hazardous, and transuranic wastes but does not include high level waste programs as defined in DOE Order 435.1, Radioactive Waste Management.

11.1.1.1.42Charter 6.17 Site Business Managers Committee

This Contractor's Site Business Managers Committee (SBMC) provides company-level leadership, direction, and oversight for the integrated planning, budgeting, and execution of the Contract Scope of Work. The SBMC is responsible for the overall planning and policies that

ensure the integration of all business activity in a manner that maximizes corporate performance while enhancing the company's position with the customer for future work. This includes:

The integration of:

Corporate and Business Unit (BU) strategies.

BU plans, schedules, and budgeting activities and execution schedules including the Yearly Fiscal Plans, the Work Authorization Execution Plan (WAEP), Out-Year plans, Life Cycle estimate submittals, and the associated this Contractor's Organization budgets.

Corporate-sizing and cost reduction programs.

Corporate business system training.

Corporate performance review processes.

Providing issue resolution recommendations to Management Council and this Contractor's Corporate Change Control Board.

Providing a forum for communication and resolution of cross-functional and crossorganizational issues both within this Contractor's and between this Contractor and the Department of Energy (DOE).

Developing priorities for resources.

Reviewing projected government furnished services and items (GFSI) changes and analyze potential impacts on scope execution plans.

Recommending and sponsoring process improvements for work execution.

11.1.1.43Charter 6.18 Site Environmental Regulatory Integration Committee

This Site Environmental Regulatory Integration Committee (ERIC) provides a structured setting for the management of the site's environmental management system and timely communications among Business Unit environmental managers. The ERIC provides a forum that will enhance the understanding of environmental hazards, requirements, and policies, achieve sitewide consistency in the implementation and integration of these requirements into facility operations, and improve cost effectiveness in the site environmental management system. The ERIC formulates environmental practices and implementation of regulatory requirements based upon subject matter expert interpretations of the regulations. Consideration will be given to best management practices and commercial benchmarks and will be tailored as required to meet applicable Department of Energy (DOE) and Site unique requirements. In this regard, the ERIC's goal is to achieve compliance with regulatory requirements while addressing operational/economic constraints.

11.1.1.1.44Charter 6.20 Safety and Health Review Committee

The Safety and Health Review Committee (SHRC) is chartered by the Site Policy and Procedures Council (SPPC). The SHRC provides a vehicle for participation and communication among This Contractor's organizations with regards to all facets of safety and health policies and procedures. The SHRC acts as a forum among organizations for safety and health procedure requirements, development, management, training and use within this Contractor.

11.1.1.1.45Charter 6.25 Chemical Management Committee

This Site Chemical Management Committee (CMC) provides a structured setting for programmatic review and ongoing development of the site's chemical management program. It provides a communications forum for the discussion and resolution of chemical management issues by Business Unit representatives. The CMC provides a forum that will enhance the understanding of chemical requirements and policies to help achieve sitewide consistency in chemical management, and enhance understanding of chemical management issues.

11.1.1.1.46Charter 6.28 This Contractor's Training Managers Committee (TMC)

The Training Managers Committee (TMC) provides a vehicle for communications among training personnel associated with all This Contractor's organizations. The TMC is a forum for consistent programmatic integration of activities, problem identification and resolution, and policy development among this Contractor's Training Program Manager and Business Unit Training Managers, with direct involvement of selected training professionals from across the site. The TMC provides assistance in the formulation and implementation of training policy and practices for the site are based upon requirements, best practices and benchmarks and are tailored as required to meet applicable DOE and Site unique requirements

11.1.1.47Charter 6.29 Information Technology Steering Committee (LTSC)

This Contractor's Information Technology Steering Committee provides company-level, mission-centered oversight and focus for the planning, validation, and recommended investments in this Site's information technology systems and infrastructure. The scope includes all this Contractor's information technology systems and infrastructure.

11.1.1.1.48Charter 6.31 Project Management Committee (PMC)

The Project Management Committee (PMC) is responsible for fostering successful execution of projects and promoting overall excellence in Project Management. PMC serves as a management resource to support project teams and operations customers in meeting project commitments.

11.1.1.1.49Charter 6.32 Conduct of Engineering Committee

The Conduct of Engineering Committee oversees the processes and procedures affecting conduct of engineering, engineering technical support, and configuration management on site. The Conduct of Engineering Committee is responsible for the development of processes, procedures, and appropriate training modules that apply cost effective applications to meet DOE requirements for the execution and control of nuclear and commercial/industrial designs and the methods to maintain those designs.

11.1.1.50Charter 6.33 Authorization Basis Steering Committee (ABSC)

The mission of the Authorization Basis (AB) Steering Committee is to provide a forum for the identification and resolution of issues relating to the development, implementation, and

maintenance of authorization basis related processes at Site. The AB Steering Committee is a joint Department of Energy Site Office and this Contractor's Committee consisting of managers and senior professionals representing DOE-SR and this Contractor's operating and support organizations. The AB Steering Committee is responsible and accountable to the Site Policy and Procedures Committee (SPPC), the Site Chief Engineer, and the DOE Site Safety and Radiation Protection Division Director. The AB Steering Committee develops and maintains Authorization Basis Implementation Documents for Site. These documents:

Record decisions of the AB Steering Committee for defining and implementing AB process activities at Site that are not fully defined in documents invoked through the Standards/Requirements Identification Documents (S/RIDs);

Clearly define the level of consistency to be maintained in the AB processes and products; Clearly define who selects and approves the preferred alternative where alternatives in AB processes are available; and

Implements site policy, provides interpretation, clarification, and direction, as necessary, to supplement criteria in DOE Orders, etc., to achieve the desired consistency.

The AB Steering Committee identifies issues with the AB process (or issues may be brought to the AB Steering Committee) develops resolution to those issues, and implements the improvements in the process.

11.1.1.51Charter 6.34 Packaging and Transportation Committee (PTC)

The Packaging and Transportation Committee (PTC) oversees 8te practices associated with packaging and transportation of radioactive and non-radioactive hazardous materials. The PTC serves as the policy-implementing board for sitewide packaging and transportation, both onsite and offsite. Specifically, the PTC is responsible for oversight of Standards/Requirements Identification Document (S/RID), Functional Area 13 and this Contractor's-SCD-4, Assessment Performance Objectives and Criteria, Functional Area 19.

11.1.1.1.52Charter 6.35 Procurement Specification Committee (PSC)

The Procurement Specification Committee (PSC) is a standing committee that oversees development of and revisions to procurement specification procedures and addresses issues related to the procurement process and recommends solutions.

11.1.1.53Charter 6.36 Engineering Standards Board (ESB) and Technical Committees

The Engineering Standards Board (ESB) oversees Site policy for the development, maintenance, and application of current codes and standards in conformance with applicable Department of Energy (DOE) Orders. The EBS is responsible for establishing operating policy for the Site engineering standards program, establishing technical committees and defining technical scope responsibilities for these committees, sponsoring the development and revision of the Site Engineering Standards Manual (SiteESM) and Site Engineering Practices Manual (SiteEPM), and issuing SiteESM and SiteEPM documents as controlled distribution documents.

11.1.1.54Charter 6.38 First Line Managers (FLM) Advisory Committee

The First Line Managers (FLM) Advisory Committee provides independent review, assessment, and approval of revision to all policies, procedures, and programs that impact FLM job function, and provides for uniform communication of critical information to all FLMs. The Committee provides a forum for communication of FLM issues and concerns to senior management, and for generation of a timely response.

11.1.1.1.55Charter 6.41 Planning, Scheduling, and Controls Committee (PSCC)

The Planning, Scheduling, and Controls Committee (PSCC) is a site-wide committee that provides a forum for the development and maintenance of a site-wide planning, scheduling, and controls process for this Contractor. The specific charter of the committee is to:

Ensure that this Contractor has a site controls process for providing the cost and schedule direction to plan, analyze, coordinate, and monitor the current and future missions, and allow a consistent and concise reporting capability.

Define site integration process for all levels of cost and schedule controls.

Prepare formal procedures and/or desktop guidance for this Contractor's site scheduling and controls systems.

Coordinate the development and implementation of procedures and standards that have site wide implications.

Standardize controls software, hardware, training and services that have cross-organizational impacts.

The committee serves as a clearinghouse to provide coordinated efforts to develop, research, and implement Controls needs for the site in cooperation with all Business Units.

11.1.1.1.56Charter 6.42 Workforce Planning Committee (WPC)

This Contractor's Workforce Planning Committee provides strategic guidance and direction for the management of the work force, and ensures processes and programs to facilitate work force restructuring are developed and implemented. The Workforce Planning Committee has oversight responsibility for all workforce-related activities pertaining to staffing or resource driven initiatives.

11.1.1.57Charter 7.5 Management Council

Management Council is the senior management entity advising this Contractor's President and Executive Vice President on key policy decisions of site wide impact. Management Council will make recommendations that affect employee development, business strategies, financial performance, and operational excellence to executive management for final approval. This Contractor's President sponsors and chairs Management Council. The Executive Vice President and Business Unit Directors reporting to the President are members. The only membership substitutions are Deputy Managers or designated alternates.

11.2 This Contractor's 1B Management Requirements and Procedures (MRPs)

11.2.1.1.1 Procedure Manual 1B, MRP 1.06 Employee Concerns Program (ECP)

In accordance with this Contractor's policy on "Open Communication", employees are encouraged and expected to identify and seek resolution of their workplace issues and concerns such that employees and management can work together to resolve these issues in an equitable and professional manner. Employees are expected to express their concerns directly to their supervision or management, or through the appropriate avenue, program or service as is available to address specific workplace issues. This Contractor's Employee Concerns Program (ECP) is available to assist employees in seeking resolution of their workplace issues and concerns if resolution through the established channels cannot be achieved, the employee fears reprisal should existing avenues be sought, or the employee wishes to remain anonymous. The ECP provides an independent and impartial avenue for this Contractor and onsite this Contractor's subcontractor employees to seek assistance in addressing concerns related to environmental, safety, health, quality, safeguards & security, waste/fraud/abuse, mismanagement, reprisal and other matters under the above noted conditions. This procedure establishes the guidelines for expressing and responding to workplace issues and concerns that are identified to ECP in accordance with the open communication policy.

11.2.1.1.2 Procedure Manual 1B, MRP 1.24 Development, Review and Approval of Memoranda of Understanding/Memoranda of Agreement

This procedure provides guidance in developing a Memorandum of Understanding (Agreement) (MOU/MOA) for interfacing organizations, should such an agreement become necessary. MOUs/MOAs are developed and used whenever organizational interfaces between Business Units/Departments or organizations/functions require clear, written definition of responsibilities not addressed in established procedures. This procedure does not apply to outside subcontractors. Generally, an MOU/MOA will be necessary when performing or receiving services inside another facility, using that facility's resources, or interfacing with the facility's systems or equipment. MOUs/MOAs do not replace or contradict approved procedures and are not intended to "authorize" work. They are not to be used to provide work instructions.

11.2.1.1.3 Procedure Manual 1B, MRP 3.01 Integrated Procedure Management System (IPMS)

This procedure defines this Contractor's Integrated Procedure Management System (IPMS) and applies to the development, numbering, and processing of all this Contractor's procedures, policies, and source and compliance documents. MRP 3.26, "Management of Company-Level Policies and Procedures," MRP 3.27, "Management of Program-Specific Procedures," and MRP 3.32, "Document Control" define the requirements and provide the methods for preparation, processing, and control of company-level and program-specific procedures.

11.2.1.1.4 Procedure Manual 1B, MRP 3.26 Management of Company -Level Policies and Procedures

This procedure establishes responsibilities and requirements for the preparation, review, approval, revision, and cancellation of company-level policies, procedures, and charters. Company-level procedures set responsibilities for Site Business Units in addition to the authoring Business Unit; consequently, the responsibility (accountability) for complying with the procedure rests with all affected Business Units. This procedure outlines the roles and responsibilities of the Site Policies and Procedures Committee in the procedure review and approval process. The provisions of this procedure apply to this Contractor and other members of the Performing Entity, as listed in the Contract, for management and operations at the Site, and to subcontractors performing work for any member of the Performing Entity when required by contract or applicable law—that generate or process company-level policies, procedures, and charters. For other procedures addressing procedure management:

- Procedure Manual 1B, MRP 3.01, *Integrated Procedure Management System* (IPMS), explains the numbering system used to maintain the functional hierarchy of procedure manuals.
- Procedure Manual 1B, MRP 3.27, Management of Program-Specific Administrative Procedures, contains information about processing administrative procedures at the program-specific level.
- Procedure Manual 2S, *Conduct of Operations*, provides requirements for the generation and processing of program-specific technical and response procedures.

11.2.1.1.5 Procedure Manual 1B, MRP 3.27 Management of Program-Specific Procedures

This procedure serves to establish responsibilities and requirements for preparation, review, approval, revision, and cancellation of program-specific administrative procedures. Program-specific procedures are procedures (Business Unit/department/section/group), excluding company-level that provide detailed, step-by-step, sequential actions and a prescribed, auditable method of completing a particular process or task (technical or administrative). These procedures do not set requirements for Business Units other than the one authoring the procedure. The provisions of this procedure apply to this Contractor and other members of the Performing Entity, as listed in the Contract, for management and operations at the Site, and to subcontractors performing work for any member of the Performing Entity when required by Contract or applicable law - that generate or process program-specific administrative procedures. For other procedures governing procedure management:

- MRP 3.26, "Management of Company-Level Policies and Procedures" addresses development and processing of company-level procedures.
- MRP 3.01, "Integrated Procedures Management System (IPMS)" explains the numbering system used to maintain a functional hierarchy of procedure manuals.
- Procedure Manual 2S, Conduct of Operations Manual provides requirements for the generation and processing of program-specific technical and response procedures.

For those organizations with a very limited number of procedures or only administrative procedures (i.e., do not have operations and maintenance responsibilities for facilities and

operating systems), MRP 3.26 can be used to fulfill format and process requirements. It will be understood that any statements in MRP 3.26 referring to senior staff are replaced by the organization's appropriate level of personnel.

11.2.1.1.6 Procedure Manual 1B, MRP 3.31 Records Management

This procedure establishes responsibilities and requirements for This Contractor's compliance with applicable U.S. Department of Energy (DOE) requirements relating to records management. This Contractor is responsible to provide a comprehensive records management program which meets this Contractor's business purposes and the legal requirements for records, including receipt, validation, scheduling, and tracking of records.

11.2.1.1.7 Procedure Manual 1B, MRP 3.32 Document Control

This procedure establishes responsibilities and requirements for this Contractor's compliance with applicable U.S. Department of Energy (DOE) requirements relative to Document Control. The provisions of this procedure apply to members of the Performing Entity for management and operations at this Site, and to subcontractors performing work for any member of the Performing Entity when required by contract or applicable law for the preparation, processing, and utilization of unclassified documents, which require controlled distribution to ensure the current versions are in place, and in use.

11.2.1.1.8 Procedure Manual 1B, MRP 4.03 Site Remote Worker Notification

This procedure provides guidance to all personnel who may be engaged in work in a remotely located area within the boundaries of this Site. This procedure ensures all personnel working in remote areas are accounted for and can be immediately notified of radiological and/or toxic chemical releases, severe weather, and other dangers or natural disasters affecting personnel safety. This procedure also provides guidance for remote workers to request emergency response from the Site Operations Center (SiteOC) in case of injury or some other emergency occurring at their work site.

11.2.1.1.9 Procedure Manual 1B, MRP 4.14 Lessons Learned Program

This procedure establishes the responsibilities and actions required for implementing this Contractor's Lessons Learned Program. This program promotes safe, effective operation of Site facilities and enhances the safety and health of Site employees and the public by applying the lessons learned from the systematic review of operating experience at Site facilities, and of similar Department of Energy (DOE) complex and commercial nuclear industry facilities. The procedure administers this Contractor's Lessons Learned Program in the areas of quality, process safety, and personnel safety and health. Process safety not only includes conditions causing degradation of operations and equipment, but also those conditions capable of negative impact on the environment and public confidence.

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11.2.1.1.10Procedure Manual 1B, MRP 4.19 Requirements for Facility Operations Safety Committees

This procedure provides requirements for the Facility Operations Safety Committee (FOSC). NOTE: the FOSC is a generic title to denote a facility or organizational level of committee. If committee titles have already been established, they need not be changed; however, the functionality must conform to this procedure.

This procedure applies to the chairperson, secretary, members, alternates and interfacing personnel for the above committees and addresses function, membership, qualifications and training, and meeting requirements to provide consistent site wide application of advice and expertise. This procedure applies only to Hazard Category 1, 2 and 3 Nuclear Facilities, as defined in Procedure Manual 11Q, Facility Safety Document Manual.

11.2.1.1.11Procedure Manual 1B, MRP 4.21 Problem Identification and Resolution Process

This procedure provides the process for identifying and resolving problems identified with and/or through the following activities and processes to meet the requirements of Policy Manual 1-01, Management Policies, MP 5.35, "Corrective Action Program":

Quality Assurance Program (QAP) requirements (including Quality Assurance {QA} Audits and Surveillances)

Radiological Protection (RP) Program requirements

Occurrence Reporting System (ORPS) to include Department of Energy (DOE) Occurrences/Events Reportable & Non-Reportable Occurrences/Events within the specified Reporting Groups of the DOE Occurrence Reporting System

Individual Business Units may use this procedure for any additional areas within MP 5.35 Scope or as a replacement for current Business Unit-specific deficiency identification and management process. See Policy Manual 1-01, Policy 5.35, Attachment B, "Corrective Action Program Applicability Matrix", for a detailed listing of the above. Note: Upon full implementation of MRP 4.23 STAR below by all organizations and projects, MRP 4.21 will be cancelled.

11.2.1.1.12Procedure Manual 1B, MRP 4.23 Site Tracking, Analysis, and Reporting (STAR)

This procedure provides the process for documenting identified problems and managing their resolution to meet the requirements of Policy Manual 1-01, Management Policies, MP 5.35, "Corrective Action Program," and other facility/organization/project commitments and actions (i.e., non-problems) not associated with MP 5.35. This procedure is implemented using a site wide database system called "Site Tracking, Analysis, and Reporting (STAR)." The STAR system is an electronic format where problems are entered, analyzed, processed, and associated actions tracked to closure. STAR is a paperless system that features routing and notification via electronic mail, electronic signature (approval), and electronic records (where applicable). A detailed User's Guide that describes the methods for processing a STAR, is available on the STAR Webpage accessible through the Site intranet.

11.3 This Contractor's Company-Level Manuals

11.3.1.1.1 Procedure Manual 4B Training and Qualification Program Manual

This Contractor is committed to having a well-trained and competent workforce at this Site. In order to accomplish this commitment, this Contractor's Manual 4B, Training and Qualification Program, was developed to establish standards to ensure this Contractor's workforce maintains the appropriate training for safe operations in a consistent and cost-effective manner. The standards included in this manual comply with the requirements of applicable DOE Orders.

11.3.1.1.2 Procedure Manual 5B Human Resources Manual

Tthis Contractor's management believes in equality and advancement opportunities for all employees and applicants regardless of race, color, religion, gender, age, national origin, disability or veteran status, and desires to create an environment which values diversity and maximizes human resources utilization. This Contractor is committed to filling vacant positions with the best-qualified applicants. This Contractor recognizes that continued success depends on developing and using the full range of human resources available to it.

11.3.1.1.3 Procedure Manual 6B Program Management Manual

This Manual provides this Contractor's Site Management Control System (MCS) description and implementing procedures for the contractually invoked DOE Site Strategic Plan and EM Performance Management Plan (PMP). This Contractor's Site MCS defines this Contractor's requirement and processes for site planning, budgeting and integration. It establishes MINIMUM requirements and criteria for Business Unit programs and Business Unit development of scope, schedule, budget and performance metric development to effectively allow site prioritization and integration of scope, schedule, budget and performance metrics. The Work Authorization/Execution Plan is implemented for NNSA work. NNSA performance will be evaluated against Performance Based Incentives, whereas EM work will be evaluated against DOE Headquarters Clean-Up Incentives that are established in relation to the Contract Performance Baseline.

11.3.1.1.4 Procedure Manual 7B Procurement Management

This manual defines the requirements for preparation, review, approval, and control of purchase requisitions for all procurements for this Contractor. This manual covers activities related to preparing and processing purchase requisitions and related documents to define technical, quality and schedule requirements for any type of proposal, quotation and request for procurement of materials and services from sources outside of this Contractor. This manual requires the "Subcontract Safety Checklist" for on-site services requisitions, and the "Subcontract Field Conditions" form for on-site services work determined to be hazardous from completion of the Subcontract Safety Checklist. This Manual refers to this Contractor 8Q for implementing the Worker Protection Program for Subcontracted Services. See Procedure Manual 11B below for information regarding management of subcontracts after the subcontract has been awarded.

11.3.1.1.5 Procedure Manual 8B Compliance Assurance Manual

It is both the policy and obligation of this Contractor to conduct its assigned operations and related programs at Site in full compliance with all applicable rules, regulations, and directives. This manual defines and describes a single comprehensive Compliance Assurance Program which applies broadly to all this Contractor's operations and related programs for this express purpose. This Contractor's Compliance Assurance Program encompasses general overall compliance but has emphasis on those requirements relating to public and worker safety and the protection of the environment as defined in the S/RID. A procedure in this manual establishes a site-wide process for identifying, evaluating, reporting and tracking Price-Anderson Amendments Act (PAAA) noncompliances and associated corrective actions with Department of Energy (DOE) nuclear safety requirements. This manual defines the administrative processes for maintaining the S/RID and non S/RID requirements bases.

11.3.1.1.6 Procedure Manual 9B Site Item Reportability and Issue Management

Procedure 1-0, *Occurrence Reporting*, is used to implement an occurrence reporting program to ensure appropriate and timely identification, categorization, response, notification, investigation, reporting, and analysis of abnormal conditions and events in accordance with Department of Energy (DOE) Manual (M) 231.1-2, *Occurrence Reporting and Processing of Operations Information*, as committed in this Contractor's Standards/Requirement Identification Document (S/RID). To streamline the process and eliminate unnecessary duplication of material from the DOE directive, portions of DOE M 231.1-2 committed through the 8/RID that are appropriate and technically accurate for direct use are incorporated by direct reference into this procedure. For these instances, the user is sent to the applicable portions of DOE M 231.1-2 through the S/RID webpage accessible through the Site intranet. The provisions of this procedure apply to members of the Performing Entity for management and operations at this Site, and to subcontractors performing work for any member of the Performing Entity when required by subcontract or applicable law.

11.3.1.1.7 Procedure Manual 11B Subcontract Management Manual

The primary responsibility of Procurement and Materials Management is to provide for the purchase of materials, services and supplies with the objective that they be available at the time, place, quantity, quality, and price consistent with the needs of this Contractor and this Site. Subcontract Management is part of the balancing of several factors that are critical to the success of this Contractor in meeting goals and satisfying its customer(s). Subcontract Management includes all relationships between This Contractor and the subcontractor which grow out of subcontract performance. It encompasses all dealings between the parties from the time the subcontract is awarded until the work has been completed and accepted, all badges have been returned, government furnished equipment has been returned, payment has been made and disputes have been resolved. This manual is established to set subcontract management standards and requirements that are to be used at Site. This manual includes incorporation documents (ID) which define the location of requirements and responsibilities of the subcontract management program that are appropriately located in other company-level procedure manuals. This manual contains the program for Subcontract Technical Representatives (STRs).

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11.3.1.1.8 Procedure Manual 12B Information Management Manual

This manual establishes the responsibilities for the Information Management Program. The requirements are identified in DOE Order, 200.1, Information Management Program. Among other topics related to business aspects of information management, this manual addresses software management methodology with appropriate emphasis on the implementation of Software Quality Assurance, software quality controls, and computer security requirements.

11.3.1.1.9 Procedure Manual 13B Chemical Management Manual

This manual defines major elements of a chemical safety management program for this Contractor, as integrated into the following activities:

Site Request of Chemicals

This procedure defines the responsibilities and requirements for Site organizations requesting chemicals. The provisions of this procedure apply to members of the Performing Entity for management and operations at this Site, and to subcontractors performing work for any member of the Performing Entity when required by subcontract or applicable law, whose operations request chemicals.

Receipt, Storage, and Inventory of Chemicals

This procedure defines the responsibilities and requirements for the receipt of chemicals and the maintenance of the Site chemical inventory. This procedure also addresses storage issues related to receipt and inventory of chemicals, in order to comply with the Occupational Safety and Health Administration (OSHA) Hazard Communication Standard, Emergency Planning and Community Right-To-Know Act (EPCRA), and the Site chemical management program.

Site Hazard Communication Program

The purpose of this procedure is to inform employees how the provisions of the Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (29 CFR 1910.1200) are implemented at this Site. The provisions of this procedure apply to members of the Performing Entity for management and operations at this Site, and to subcontractors performing work for any member of the Performing Entity when required by subcontract or applicable law.

Excess Chemical Program

This procedure provides requirements for the review and disposition of non-radioactive excess chemicals and chemical products at this Site. The provisions of this procedure apply to members of the Performing Entity for management and operations at this Site, and to subcontractors performing work for any member of the Performing Entity when required by subcontract or applicable law. This procedure applies to all Site organizations that utilize chemicals and/or products containing chemicals.

Compressed Gas Cylinders: Purchasing, Handling, Storage and Use

This procedure establishes requirements for the purchasing, handling, storage, and use of compressed and liquefied gases in portable cylinders at this Site. This procedure is currently under revision to comply with an updated NFPA requirement that applies to cryogenic liquids, which have normal boiling points below -130°F (-90°C).

MSDS Maintenance and Availability Requirements

This procedure establishes requirements for the maintenance and availability of this Site's Material Safety Data Sheets (MSDSs) to comply with Occupational Safety and Health Administration (OSHA) Hazard Communication Standard requirements as given in 29 Code of Federal Regulations (CFR) 1910.1200 (General Industry), 29 CFR 1926.5 (Construction), and 29 CFR 1910.1450 (Hazardous Chemicals in Laboratories).

11.3.1.1.10Procedure Manual 1C Facility Disposition Manual

The program described in this manual uses a graded approach to requirements during the disposition phase of the facility life cycle. The program allows for consideration of differences among facilities, and it provides a method for determining the extent to which actions are appropriate for that facility. The depth of detail and the magnitude of resource expenditure for each program element are commensurate with that element's relative importance to safety and the magnitude of the hazards involved. The program outlined in these procedures represents the ideal case, where it is recognized in advance that a facility has reached the end of its useful life and steps are taken to initiate disposition. In addition to this ideal case, there have been and will continue to be facilities that are already inactive, but for which no consideration has been given to disposition of the facility. As these legacy facilities are identified, they will be evaluated as to their current condition and hazards, and inserted into this program wherever appropriate, without any major effort to backfit previous steps or deliverables. The planning and execution for the disposition of excess facilities and/or associated equipment will be conducted using project management principles with a graded approach through the following life cycle phases:

Transition from Operations; Deactivation; Safe Storage (Awaiting Decommissioning); Decommissioning; and Final End State and Close Out.

11.3.1.1.11Procedure Manual 3E Procurement Specification Procedure Manual

This manual contains information to be used when developing or processing procurement specifications. A "Specification" used in a procurement activity is a type of procurement requirement which requires a higher level of attention. For purposes of this manual, the term specification signifies a design document used to provide a detailed description of requirements of items and/or services including installation. This manual establishes the process used to

identify the functional, technical, and quality requirements associated with an item or service that is to be obtained through a procurement activity. This manual also establishes the requirements for the preparation, review, approval, and control of documents used to specify requirements for procurement of items and services at Site. This manual invokes use of the Site Requirements for Services Subcontracted Scopes (SR3S) database for procurements that require subcontractors to perform work at Site. The SR3S database serves to assist preparers of subcontract Statements of Work (SOW) to address applicable this Contractor's S/RID requirements to be flowed down in subcontracts. Interpretation and maintenance of this manual is the responsibility and authority of this Contractor's Engineering Standards Section of the Technical and Quality Services Department.

11.3.1.1.12Procedure Manual 5E Startup Test

This Contractor's Startup Test Manual was developed to provide guidance and identify requirements for an initial facility startup or restart testing program and to establish uniformity and consistency in methodology for the development and implementation of the test program activities. This manual applies to all organizations that perform Startup or Restart testing activities on Site facilities as governed by the Startup and Restart Operational Readiness requirements contained in the Procedure Manual 12Q.

11.3.1.1.13Procedure Manual 1Q Quality Assurance Manual

This manual, under the auspices of the Quality Assurance Policy Committee (QAPC), this Contractor's 1-01 Charter 6.12, describes the requirements, responsibilities, and controls for implementing and maintaining this Contractor's Quality Assurance (QA) Program. The contents of this manual are responsive to the requirements of DOE Order 414.1B, 10CFR830 Subpart A, *Ouality Assurance Requirements*, and to this Contractor's Quality Assurance Management Plan (QAMP, this Contractor's-RP-92-225). The integration of the Quality Assurance Program into this Contractor's ISMS is addressed in this manual and in the QAMP. The procedures contained in this Manual define company-level requirements for quality achievement, verification, and improvement. As such, these apply to all this Contractor's activities associated with providing the products and services to the DOE. Some procedures may be used without further elaboration. Others may require the development and use of organization-specific implementing procedures. In the event that lower-tier implementing procedures are used, the organization must maintain an appropriate cross-reference (e.g., matrix) to assure and demonstrate continuing alignment of the implementing procedures with the applicable requirements of this Manual. It should also be noted that other company-level Manuals and procedures are linked to the QA Manual. These provide additional guidance and requirements for accomplishing specific tasks or activities, e.g., engineering, procurement, records management, etc.. Where subcontractors are expected to work to these procedures, it shall be stated in the applicable procurement documents.

11.3.1.1.14Procedure Manual 2Q Fire Protection Program

This manual provides overall direction and guidance to this Contractor's organizations and Site personnel responsible for implementation of this Contractor's Fire Protection Program, including the conduct of Fire Hazards Analyses (FHAs). This manual also establishes responsibilities to provide interpretation and assistance to ensure compliance with this Contractor's-RP-94-1268-

012, Standards/Requirements Identification Document (S/RID) for Functional Area 12.0, Fire Protection and NFPA codes affecting fire protection to minimize losses from fire and related perils and ensure that safety objectives are met.

11.3.1.1.15Procedure Manual 3Q Environmental Compliance Manual

This manual provides guidance and, when necessary, detailed information concerning proper procedures and activities as prescribed by federal, state, and local laws and regulation, Department of Energy (DOE) orders, and this Contractor's polices. This manual invokes this Contractor's Environmental Management System (EMS) that applies the principles and specific requirements of the ISO 14001 Standard in this Contractor's conduct of activities associated with environmental protection. This Contractor's Environmental Protection Program is in compliance with DOE O 450.1, Environmental Protection Program and Executive Order 13148, Greening the Government Through Leadership in Environmental Management. Failure to comply with these laws and regulations can result in actions including findings, notices of violation, fines, and criminal suits or civil suits from the public. The Environmental ALARA Program is documented in Manual 3Q1-2, Procedure 1100, and results are monitored by Monthly Radiological Releases Reports per Manual 3Q1-9, Procedure 1040.

11.3.1.1.16Procedure Manual 4Q Industrial Hygiene Manual

This manual establishes the mission of the Industrial Hygiene (IH) program managed by this Contractor's Industrial Hygiene Programs Section to prevent occupational illnesses and preserve the health of Site employees in accordance with Department of Energy (DOE) Orders and DOE-prescribed occupational safety and health (OSH) standards. The Integrated Exposure Assessment Program establishes requirements for performing and documenting exposure assessments for chemical, physical, and biological agents. The hazard prevention and control procedure assures effective engineering, work practice, and administrative controls to control/reduce employee exposure to occupational hazards. Also, the Health (Medical) Surveillance Program and two specialized IH Programs addressing lead and beryllium are defined in this manual, as well as the Chemical Control Program that includes a Chemical Hygiene Plan. Some of the additional programs defined by this manual include Laser Safety, Laboratory and Radiobench Hoods and Local Exhaust Systems, Hazardous Waste Operations (HAZWOPER), Respiratory Protection, Training and Documentation.

11.3.1.1.17Procedure Manual 5Q Radiological Control

DOE has established basic standards for occupational radiation protection in Federal Regulation 10 CFR 835, *Occupational Radiation Protection*. That regulation requires affected DOE activities to be conducted in compliance with a documented Radiation Protection Program (RPP) that addresses each requirement of that regulation and is approved by DOE. This Contractor's *RPP*, *this Contractor's-RP-94-1239*, *Radiation Protection Program for 10 CFR Part 835 Occupational Radiation Protection*. links each requirement of the regulation to a specific S/RID entry which, in turn, links to a this Contractor's implementing Policy and/or Procedure. Compliance with the requirements of this 5Q manual and associated site radiological control procedures will ensure that the user is in compliance with 10 CFR 835, the RPP, and related documents. The user is encouraged to review any underlying regulatory and contractual

requirements and the primary guidance documents in their original context to ensure compliance with the applicable requirements.

11.3.1.1.18Procedure Manual 6Q Site Emergency Plan Management Program Procedures

This manual establishes the site requirements and standard methods for the development and maintenance of an Emergency Preparedness Program. This Manual contains standards that address the following emergency preparedness program requirements:

Development and Maintenance of an Emergency Planning Hazards Assessment (EPHA);

Development and Maintenance of Emergency Action Level (EAL) Procedures;

Establishing and Maintaining Personnel Accountability Programs;

Development and Conduct of Facility Emergency Preparedness Drills;

Site Level Emergency Services Drill and Exercise Coordination and Conduct;

Facility/Area Emergency Response Facilities,

Emergency Response Organization (ERO) Administration,

Establishing the Principal Function and Related Operations of the Safety Alarm System; and This Contractor's-SCD-7, the Site Emergency Plan (formerly Volume 1 of Procedure Manual 6Q) defines appropriate response measures for the management of emergencies involving the Site.

11.3.1.1.19Procedure Manual 7Q Security Manual

This manual has been prepared to establish the requirements for implementing company policies and to identify requirements and procedures to comply with guidelines set forth in applicable Department of Energy (DOE) Orders and Department of Energy Site Office Directives. This manual establishes security controls and procedures applicable to operations performed by this Contractor under contract to DOE at this Site. The purpose of this manual is to provide employees of this Contractor and subcontractor personnel with direction as required by applicable DOE Orders and other directives.

Federal Laws and applicable DOE Orders require this Contractor to protect government-owned, company-controlled property from acts of theft, diversion, arson, sabotage, or malicious destruction. This Contractor is committed to security with special concerns for the protection and safety of personnel, special nuclear material (SNM), classified information, government property, and any act that may compromise or cause an adverse impact on national security or program continuity.

This Contractor's S&S programs are based on vulnerability/risk analyses designed to provide graded protection in accordance with the asset's importance. This Contractor's S&S programs are tailored to address facility-specific characteristics. Facility-specific protection programs shall be documented. Risks to be accepted by DOE shall be identified and documented by S&S planning documents that contain vulnerability/risk analyses. S&S programs provide a high degree of assurance of the capability to deter, detect, assess, delay, prevent, and/or inhibit unauthorized access to nuclear weapons, nuclear test devices, or completed nuclear assemblies, Category II or greater quantities of SNM, and vital equipment.

11.3.1.1.20Procedure Manual 8Q Employee Safety Manual

This manual establishes company safety requirements, procedures, minimum program requirements, and defines responsibilities for their implementation. The cornerstone of this Contractor's safety program is the individual right of every employee, including subcontractors, to stop work if they observe employee safety being compromised. Some examples of procedures contained in this manual are:

Management and Administration of this Contractor's Employee Safety Program.

Safety Policy and Program Responsibilities.

This Contractor's Site Safety Committees (e.g., BBS Steering Committee, VPP Core Team, etc.).

Reporting Unsafe Practices or Conditions.

Workplace Safety and Health Program for Site Visitors, Vendors, and this Contractor's Subcontractors (includes Point-of-Entry (POE) procedure that ensures all visitors, vendors, and subcontractors get a general safety, radiological, and security briefing before being allowed to enter the Site).

Reporting, Responding, Investigating, and Recording of Occupational Injury/Illness of Near Miss.

Off-The-Job Safety Program.

Reporting Damage to Vehicles/Property Owned by the Government or Used for Government Business.

Final Acceptance Inspection of New, Altered, or Dispositioned Facilities or Equipment.

Assisted Hazard Analysis (AHA) – Task-Level Hazard Analysis.

General Site Safety Requirements.

Rules for Safe Conduct.

Safety Requirements for Specific Activities and Equipment.

Basic electrical safety awareness, requirements for working near overhead power lines, motor vehicles, scaffolds, aviation, boating, lockout/tagout, confined space entry, safety showers and eyewash facilities, personal protective equipment, hand and portable power tools, pedestrians, parking lots, ladders and a number of other specific activities and equipment.

11.3.1.1.21Procedure Manual 10Q Computer Security Manual

Regarding Computer and Information Security, this Contractor shall conduct operations in accordance with applicable public law, DOE Orders and sound business practices. Management and all users of computer resources are accountable for information assets, designation of mission-essential and sensitive information, loss reporting, business resumption plans following disasters, and security control objectives. The Site's information resources must be protected in an environment of changing technology and constant competition. The purpose of the Computer Security Program at this Site is to adequately and cost effectively protect the integrity,

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confidentiality, and availability of classified and unclassified information, networks, systems, and applications. The accomplishment of this purpose entails the establishment of further responsibilities and general program requirements for determining risk, planning, training, procuring, managing, using, and controlling computing resources in support of the DOE-Site mission.

11.3.1.1.22Procedure Manual 11Q Facility Safety Document Manual

Procedure Manual 110 addresses facility hazard categorization, safety analysis and safety basis documentation requirements and provides an effective system for implementing those requirements tailored to the type and level of hazards present. This manual implements the safety documentation requirements of 10 CFR 830, Subpart B, for nuclear facilities. Requirements of hazard analysis or safety analysis and documentation of the analysis are contained in various site-wide programs and manuals. This Manual consolidates these requirements (one-stop shopping for safety basis documents). However, this manual does not cover those aspects of sitewide programs not related to safety analysis/documentation. For example, site-wide Fire Protection Program (i.e., Procedure Manual 20) consists of many elements, but this manual covers only those elements related to safety analysis/documentation (i.e., Fire Hazard Analysis). This manual also addresses the site programs for Unreviewed Safety Questions, Authorization Agreements, Radioactive Waste Management Basis, Linking Documents, and describes the Integrated Worker Safety Program.

11.3.1.1.23Procedure Manual 12Q Assessment Manual

This manual contains the programmatic direction for this Contractor's Assessment Programs as follows:

Control of Performance Objectives and Criteria (POC)

A key part of this Contractor's Assessment Process is a standard set of POC upon which assessments of this Contractor's facilities are based. Those POC are contained in this Contractor's-SCD-4. Assessment Performance Objectives and Criteria.

Startup and Operational Readiness Assessments

Procedures are provided for the uniform conduct of this Contractor's Management Self-Assessments (MSAs - optional), this Contractor's Operational Readiness Reviews (ORRs), and this Contractor's Readiness Assessments (RAs), Routine Startups and Startup Authorization. The procedures in this section of Procedure Manual 12Q, Assessment Manual, identify the activities required of this Contractor to accomplish nuclear activity startups. Based on the graded approach identified in the referenced DOE documents, various levels of this Contractor's and DOE assessments (up to and including a DOE ORR) are performed to ensure that all requirements identified in startup planning documents have been satisfied prior to the startup. This graded approach is based on the hazard category assigned to the activity and, if a restart, the circumstances surrounding the shutdown.

Self-Assessment Program

Self-Assessments are implemented throughout this Contractor to: Measure level of performance of this Contractor's activities. Demonstrate ongoing compliance to regulatory requirements. Identify problems.

Determine strengths and best practices.

This program defines the structure, principles, responsibilities, and associated requirements for Self-Assessments as applied to this Contractor's organizations, assessment units, and functional programs. Self-Assessments, along with Performance Analysis described below, are part of this Contractor's Management Assessment process.

Facility Evaluation Board Assessments

This Contractor's Facility Evaluation Board (FEB) teams staffed by Operations Evaluation Department personnel:

Provide accurate, consistent, and gradable measures of facility/project and program performance effectiveness.

Evaluate adequacy of the line self-assessment process.

Satisfy contractual obligations for company-level independent oversight. Provide ongoing evaluations of this Contractor's ISMS performance.

This section of the manual defines responsibilities of line management, the Operations Evaluation Department and, FEB teams as they relate to planning, conducting, reporting, and follow-up of Integrated Safety Management Evaluations (ISMEs) by the Facility Evaluation Board.

Performance Analysis

This procedure describes this Contractor's Performance Analysis (PA) process and defines the minimum requirements for the process. The goal of the Performance Analysis process is to ensure that recurring problems, issues, or events are identified and corrected, and thereby, preventing more serious or significant occurrences. The Performance Analysis process integrates event-based and review-based operational data from a variety of sources including: occurrence reports submitted to the Department of Energy (DOE) Occurrence Reporting and Processing System (ORPS), this Contractor's Problem Identification Report (PIR) or Site Tracking, Analysis, and Reporting (STAR) managed problems, Management Assessment processes (including Performance Analysis and Self-Assessments), and other non-ORPS reportable event data. This process meets the ORPS and the Price-Anderson Amendments Act (PAAA) requirements and supports implementation of the DOE Quality Assurance Rule and Order.

11.3.1.1.24Procedure Manual 14Q Material Control and Accountability Manual

This Contractor implements and maintains a graded safeguards program to ensure that nuclear materials are protected, controlled, and accounted for. Safeguards programs are designed to meet defined threats and are effectively coordinated and integrated at all levels of operation. This manual serves to implement applicable Department of Energy (DOE) orders for which this Contractor is contractually obligated to comply. The manual defines the following program elements: 1) Basic Requirements, 2) Material Accounting, 3) Measurement Control, 4) Material Transfers, and 5) Material Control. This Contractor's Material Control and Accountability Plan is an addendum to this Procedure Manual.

11.3.1.1.25Procedure Manual 18Q Safe Electrical Practices and Procedures

This manual establishes this Contractor's Electrical Safety Program that promotes an electrically safe workplace, free from exposure to electrical hazards, for all employees and subcontractors. This manual defines the general safe electrical practices, electrical PPE and equipment inspections, and safe electric utility practices. This manual provides direction to implement the electrical safety requirements of DOE Orders, criteria and guides, and achieve compliance with applicable OSHA regulations and consensus codes and standards; e. g. , National Electrical Code (NEC), National Fire Protection Association (NFPA) Code, National Electrical Safety Code (NESC) and ANSI-C2.

11.3.1.1.26Procedure Manual 19Q Transportation Safety

This Manual documents the offsite, onsite in-commerce (OSIC), and onsite packaging and transportation program and demonstrates compliance with Department of Energy (DOE) transportation safety standards that require:

- All hazardous materials be handled in a safe manner to ensure required protection to workers, the public, and the environment.
- All onsite transfers of hazardous materials meet the requirements of applicable federal, state, and local regulations as well as DOE directives.
- All offsite shipments of hazardous materials meet the requirements of Department of Transportation (DOT).
- Regulations, applicable DOE orders, and other federal, state, and local regulations. Each person involved in the packaging and transportation of hazardous material has the required training to perform assigned job functions.

Additionally, this manual contains guidelines for facility implementation of Safety Analysis Reports for Packaging (SARP) requirements.

11.3.1.1.27Procedure Manual 21Q Protection of Human Subjects in Research

This manual establishes the requirements for human subjects research conducted at this Site. The majority of such research is performed by researchers from external institutions who are studying the health effects of working at Site or living in neighboring communities. On occasion, this Contractor's employees also may conduct research involving human subjects, such as that

necessary to evaluate man-machine interfaces or to test devices, products, or materials developed through research. The manual is divided into four procedures, each describing a major aspect of the human subjects research process as follows:

HSR-1: Administration of Research Involving Human Subjects

HSR-2: Preparation of Research Protocols

HSR-3: this Contractor's Institutional Review Board

HSR-4: Conduct of Research Involving Human Subjects

11.3.1.1.28Procedure Manual 1S Site Waste Acceptance Criteria Manual

The procedures contained in this Manual apply to all onsite and offsite generators processing waste for treatment, storage and disposal (TSD) at this Site's facilities. The scope of this manual includes associated and sanitary, low level, mixed, hazardous and transuranic wastes, but does not include high level waste programs. The Solid Waste Management Committee (SWMC – see this Contractor's 1-01 Charter 6.15) has overall technical responsibility for the contents of this manual.

11.3.1.1.29Procedure Manual 2S Conduct of Operations

This Conduct of Operations Manual, this Contractor's 2S, establishes disciplined operations of facilities by this Contractor. Operating in accordance with these procedures is a fundamental requirement for the safety of employees, the public and facilities. Compliance with these standards provides defense-in-depth against many kinds of accidents and adverse incidents by minimizing error and confusion and by providing clear means to identify problems, determine underlying causes, take preventive action before adverse events occur, and bring about continuous improvement in the quality and safety of operations. Alternate Implementation Methods for meeting the requirements of this manual may be obtained when justified according to Procedure 6.1 of this manual. Alternate Implementation Methods must meet applicable S/RID requirements.

11.3.1.1.30Procedure Manual 3S Conduct of Modifications

This procedure establishes the overall process for conduct of plant modifications (except minor and temporary modifications) at the Site. This procedure establishes the company level requirements and is supplemented by various other company and lower level manuals as identified within. This procedure provides an overview of the process for conducting plant modifications. This process implements key elements of a disciplined systems engineering approach to ensure that modifications meet customer needs and requirements in a high quality and cost effective manner. This manual serves as a "roadmap" to the various other site level and lower level manuals that are referenced within the body of this procedure and which direct the conduct of modifications of different types at the Site.

11.3.1.1.31Procedure Manual 1Y Conduct of Maintenance

This manual sets cost-effective maintenance standards that are used for equipment management at this Site. These standards, as re-engineered for Maintenance, comply with the requirements of

the Department of Energy (DOE) Order 433.1, Maintenance Management Program for DOE Nuclear Facilities as specified in the Site S/RID. This manual addresses the four general categories of maintenance: 1) Corrective Maintenance, 2) Preventive Maintenance, 3) Modification, and 4) Other Support (includes work that does not fall into one of the three categories above). This Manual does not apply to the execution of non-maintenance work, such as Decontamination and Decommissioning work. The intent of this manual is to ensure an appropriately tailored approach when determining the maintenance work method. Exceptions or deviations, which must be in compliance with the S/RID, shall be obtained in accordance with Procedure Manual 1Y, Procedure 20.01, when technically justified and approved in writing. Use of the Assisted Hazard Analysis (AHA) process (in accordance with Procedure Manual Procedure 80, Procedure 120, Hazard Analysis) is integrated into maintenance work by Procedure Manual 1Y, 8.20, Work Control. The AHA Process provides task-level hazard analysis and authorizes work to commence upon the Shift Manager's approval of the Safe Work Permit (SWP). Where procedures in this manual conflict with Project/Facility conduct of maintenance procedures, this manual will take precedence until such time as conflicts are resolved or an exception/deviation is approved and documented. Business Units, Projects, or Facilities may supplement the requirements of this manual by providing additional implementation detail, however, such supplements/exceptions shall not be deviations from the requirements of this manual. DOE has approved Procedure Manual 1Y as the Site Maintenance Implementation Plan (MIP). Procedure Manuals 1X-1 and 1Y-2 are derivative manuals of Procedure Manual 1Y that contain Site procedures for E&I and Mechanical Maintenance, respectively. Project/Facility maintenance and support personnel, as well as those in Operations and Engineering, are responsible for understanding and adhering to the requirements contained in this manual including any approved deviations or exceptions that apply.

11.3.1.1.32Procedure Manual E7 Conduct of Engineering and Technical Support

This Manual has site wide applicability. This Manual coordinates all this Contractor's engineering work among PD&CS and the Operating Business Units, including new facilities and modifications to existing facilities. Aspects of Disciplined Conduct of Projects (DCOP) have been incorporated, as appropriate, into this manual. This manual has the following sections:

Section 1.0 – Administrative, Organization and Control

Section 1.5 – Commercial Design Process

Section 2.0 – Technical Baseline Change Control

Section 3.0 – Operations Technical Support

Section 4.0 – Safety Documentation Development

Section 5.0 – Software Engineering and Control

11.3.1.1.33Procedure Manual E11 Conduct of Project Management and Control

This Manual has site wide applicability. This Manual establishes the site responsibilities and requirements for a process to perform cost effective planning, control, and execution of projects using a risk-based approach and systems engineering methods. This Manual is applicable to all projects at this Site managed by this Contractor in compliance with DOE Order 413.3 Program and Project Management for the Acquisition of Capital Assets. For the purposes of this procedure, a project is defined as a unique effort that supports a program mission with defined

start and end points, undertaken to create a product, facility, or system with interdependent activities planned to meet a common objective/mission. Formal classification of an effort as a project is determined by the Chief Financial Officer. Projects include planning and execution of construction, renovation, modification, decontamination and decommissioning efforts, and large capital equipment or technology development activities. This manual has limited applicability to Soil and Groundwater Closure Projects (S&GCP), where management and control guidance are located in the Procedure Manual C1. S&GCP at Site is managed as a single strategic system with several subprojects

11.3.1.1.34Procedure Manual 1E6 Construction Management Department Manual

This Manual has site wide applicability. This Manual directs all construction activities for all this Contractor's facilities at this Site. It is a comprehensive compilation of specialized procedures that, similar to Conduct of Maintenance and Conduct of Operations, serves to prescribe for this Contractor the "Conduct of Construction" concept, recognizing that construction has a different set of types of work and hazards. It references other this Contractor's Manuals, as appropriate: This manual is arranged in the following topical areas:

Program Administration;

Craft Management and Central Shops;

Construction Engineering Services;

Subcontracts Administration;

Environmental;

Labor Relations:

Materials;

Project Controls;

Construction Quality Control;

Safety and Health Services; and

Construction Policies and Requirements.

11.3.1.1.35This Contractor's-SCD-3 Nuclear Criticality Safety Manual

This Manual has site wide applicability. This Manual contains a flowdown of the nuclear criticality safety requirements from this Contractor's S/RID. It defines and establishes this Contractor's Nuclear Criticality Safety Program consistent with applicable DOE requirements, industry standards, company safety policy, and accepted safety practice. It provides interpretation and guidance for the uniform implementation of these requirements and standards at this Site and, as such serves as the basis for criticality safety implementing procedures and manuals at the Business Unit or lower levels of the organization.

11.3.1.1.36This Contractor's-SCD-4 Assessment Performance Objectives and Criteria

This manual has site wide applicability. This Contractor's-SCD-4, *Assessment Performance Objectives and Criteria*, is a company-level source and compliance document containing a collection of specific performance objectives and criteria (POC) intended to serve as a basis for assessments conducted by this Contractor. These POC are linked to a "smart sample" of source document requirements from this Contractor's Standards/Requirements Identification Document

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(S/RID) as promulgated in company level manuals. Assessments using POC selected from this document have proven appropriate for the following purposes:

Demonstration of readiness for nuclear activity startup or restart;

Effective identification of deficiencies and opportunities for performance improvement through self-assessment and independent oversight of operational activities;

Development of consistent review-based data for input to the Performance Analysis process; and

Demonstration of field adherence to this Contractor's policies and procedures when applied to operational activities.

Assessments using these POC also provide indication of how well this Contractor's Safety Management System is integrated throughout site activities.

11.3.1.1.37This Contractor's SCD-6-Site ALARA Manual

The purpose of this ALARA (radiation exposures "as low as reasonably achievable") Source and Compliance manual is to provide the foundation of the sitewide ALARA program for exposure to onsite personnel. The Environmental ALARA Program is implemented by Procedure Manual 3Q. This manual is the means toward completing and achieving compliance with applicable rules and regulations, and implementation of consistent ALARA policies and practices. This manual contains requirements originating in 10 CFR 835 and established good practices from operating experience.

11.3.1.1.38This Contractor's-SCD-7 Site Emergency Plan

This manual has site wide applicability. The Site Emergency Plan defines appropriate response measures for the management of emergencies involving this Site. It incorporates into one document a description of the entire process designed to respond to and mitigate the potential consequences of an emergency. This Site Emergency Plan meets the emergency response planning requirements mandated by law and applicable DOE directives and contains fifteen sections as follows:

- 1) Introduction:
- 2) Emergency Response Organization (Internal);
- 3) Offsite Response Interfaces;
- 4) Emergency Categorization and Classification;
- 5) Notification and Communication:
- 6) Consequence Assessment;
- 7) Protective Actions;
- 8) Medical Support;
- 9) Recovery and Reentry:
- 10) Public Information:
- 11) Facilities and Equipment;
- 12) Training;
- 13) Drills and Exercises:
- 14) Emergency Management Program Administration; and

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15) Emergency Management Program for Transportation.

11.3.1.1.39This Contractor's-SCD-9 Problem Analysis Manual

This manual, which has site wide applicability, specifies the required problem analysis methodology for determining the eauses of problems identified by this Contractor's Corrective Action Program (see this Contractor's MP/5.35). The level of analysis required is tailored to the relative severity of the problem being analyzed. This manual contains the Causal Analysis Tree used to determine the causes of identified problems from the Occurrence Reporting and Processing System (ORPS), Corrective Action Program, or other feedback processes.

11.3.1.1.40This Contractor's SCD-11 Consolidated Hazard Analysis Process (CHAP) Manual

This manual, which has site wide applicability, describes this Contractor's Consolidated Hazard Analysis Process (CHAP). This document was written as a guide to this Contractor's companylevel policies and procedure manuals with regard to activities and documents related to process hazards analysis. These process hazards analyses, activities, and documents are applicable to the Department of Energy (DOE) Nuclear Facilities, Radiological/Chemical Facilities, and Other Industrial Facilities at this Site operated by this Contractor. Part of this Manual called "Hazmap" is a tool that identifies and defines, for project planners, the characteristics of the various hazards analyses required at each stage of the life cycle of a facility from the conceptual, design and construction project, through the operational and finally, the D&D phases. The remainder of this manual defines features of CHAP that describe the process for developing and consolidating eleven separate process hazards analysis activities into a single integrated activity. CHAP utilizes a team approach involving personnel with the skills and knowledge necessary to address operations, engineering, hazards analysis and functional classification. In addition to the eleven process hazards analysis activities that can be consolidated as described above, the remaining specific design basis hazard analyses are more effectively integrated by the inclusion of appropriate participants on the CHAP team, such as Fire Hazards Analysts, Emergency Planning Hazards Analysts, Nuclear Criticality Safety Analysts, etc.